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BONNER DURCHMUSTERUNG

DES NÖRDLICHEN HIMMELS

Erster Band

(Bonner Beobachtungen Band III)

enthaltend die Sternörter von —2° bis +20° Decl. für 1855.0

unter Mitwirkung von **E. Schönfeld** und **A. Krüger**

auf der Königlichen Sternwarte zu Bonn beobachtet und berechnet

von

F. ARGELANDER

Direktor der Sternwarte

Zweite berichtigte Auflage

unter Mitwirkung von **F. Deichmüller**

bearbeitet von

F. KÜSTNER

Direktor der Sternwarte

Bonn

A. Marcus und E. Weber's Verlag

1903

Vorwort zur zweiten Auflage.

Die zweite Auflage der Bonner Durchmusterung ist nach dem anastatischen Verfahren durch Abdruck von der Originalauflage hergestellt. Dieses Druckverfahren, das bei guter Ausführung an Schärfe nichts zu wünschen lässt, erschien für den vorliegenden Zweck ganz besonders geeignet, weil es die vollständige Übereinstimmung mit dem Original überall dort, wo nicht absichtlich Änderungen vorgenommen werden sollen, gewährleistet; bei einem neuen Letternsatz wäre dies auch bei wiederholtem sorgfältigsten Lesen der Correctur nicht zu erreichen gewesen, wie die Erfahrung bei ähnlich ziffernreichen Werken bewiesen hat. Auf diese genaue Übereinstimmung, auch in der Reihenfolge und somit in der Numerierung der Sterne, musste aber gerade das grösste Gewicht gelegt werden wegen der vielfachen Hinweise auf die Bonner Durchmusterung, die sich in der astronomischen Literatur finden, und weil sich nicht selten lange Erörterungen an einzelne B. D.-Nummern geknüpft haben.

Die erforderlichen Berichtigungen und Zusätze sind mit der Lithographenfeder ausgeführt und zwar absichtlich in etwas grösserer und schräger Schrift, um sie als solche zu kennzeichnen. Ferner sind Sternörter oder Buchstaben, die zu tilgen waren, nicht einfach gelöscht worden, sondern horizontal durchgestrichen, derart dass die Lesart des Originales deutlich erkennbar geblieben ist.

Über die Grundsätze, die uns bei der Correctur geleitet haben, ist folgendes mitzuteilen. Als erster Grundsatz galt, überflüssige oder dem Charakter des Werkes widersprechende Änderungen zu unterlassen, und weiter, lieber einen Fehler des Originales stehen zu lassen, als eine zweifelhafte oder gar unrichtige Correctur vorzunehmen. Correcturen in den Sternörtern sind nur vorgenommen worden, wo entweder Druckfehler, oder Versehen der Beobachtung, oder der Reduktion, oder der Zusammenstellung des Cataloges vorlagen. Abweichungen der gewöhnlichen B. D.-Örter von später etwa genauer bestimmten Positionen sind, soweit sie im Bereich der zufälligen Beobachtungsfehler der B. D. lagen und keinen Irrtum in der Identifizierung des Sternes veranlassen konnten, nicht corrigiert worden; zu einer durchgehenden scharfen Correctur der Örter wäre auch die Kenntnis der Eigenbewegungen erforderlich gewesen, die in sehr vielen Fällen noch nicht vorliegt. Über die Beobachtungsfehler der B. D. hat Argelander in den Einleitungen Band I p. XXIV, Band II p. IV und Band III p. XVIII ausführliche Angaben gemacht; es geht aus ihnen hervor, und die weitere Erfahrung hat dies bestätigt, dass gelegentliche Abweichungen von etwa 4^s im Aeq. in AR. und $2'$ in Decl. nichts auffallendes haben, besonders nicht bei schwachen Sternen. Trotz dieser Beschränkung, die wir uns bei der Correctur auferlegt haben, beträgt die Zahl der corrigierten Sternörter bei-

läufig 600, ohne die nachträglichen Berichtigungen am Schlusse des Vorwortes mitzuzählen; ausserdem war noch bei ca. 200 Sternen die Grösse zu berichtigen.

In der Columne der Catalognachweise sind falsche Buchstaben berichtigt und fehlende möglichst nachgetragen worden; absolute Vollständigkeit in dieser Hinsicht kann und soll jedoch nicht verbürgt werden. Um diese zu erreichen, wären wegen der zahlreichen Fehler in den Sternverzeichnissen und Zweifel über richtige Identifizierung äusserst mühsame Untersuchungen erforderlich gewesen, die vielmehr in das Programm der von Herrn Ristenpart im Auftrage der Berliner Akademie unternommenen und schon weit geförderten Geschichte des Fixsternhimmels gehören. Herr Ristenpart hat auch die grosse Freundlichkeit gehabt, uns noch im vorigen Jahre, als der Druck schon begonnen war, einige hundert fehlender Buchstaben nachzuweisen, die zum grössten Teile noch nachgetragen werden konnten. Sie betrafen hauptsächlich Rümker; aber gerade auch in diesem Falle wird ein vollständiger Nachweis erst dann gegeben werden können, wenn die neue, von der Hamburger Sternwarte begonnene Bearbeitung der Rümker'schen Cataloge und die Aufklärung ihrer Fehler vorliegen wird.

Solche Buchstaben, die an sich richtig waren, haben wir stehen lassen und sie nicht etwa, um eine bestimmte Reihenfolge in der Anführung der Cataloge peinlich festzuhalten, durch andere z. B. L durch K ersetzt. Argelander hat eine solche Reihenfolge, wie er in der Einleitung zum ersten Bande p. XXV bemerkt, nur „im allgemeinen" befolgt, und es wären zahlreiche und im Grunde genommen ganz überflüssige Änderungen vorzunehmen gewesen, um sie nachträglich streng durchzuführen. Es ist übrigens tatsächlich in der B. D. im Gegensatze zu der a. a. O. angeführten Reihenfolge dem K vor dem B im allgemeinen der Vorzug gegeben.

Durchgehends haben wir B. B. VI nochmals mit der B. D. verglichen und die fehlenden B überall dort nachgetragen, wo nicht bereits ein anderer und an sich richtiger Buchstabe stand. Die meisten B fehlten im ersten Bande, aus dem naheliegenden Grunde, weil dieser bereits 1859 veröffentlicht ist und zahlreiche Örter in B. B. VI erst nach dieser Epoche beobachtet sind. Die zu Unrecht gedruckten B, denen keine Position in B. B. VI entspricht, sind nach der allgemeinen Regel horizontal durchgestrichen; ihr ziemlich häufiges Vorkommen, die meisten stehen auch wieder im ersten Bande, erklärt sich folgendermassen. Argelander hat bei seinen Revisionen zur Durchmusterung am Meridiankreise öfters bei benachbarten Sternen nur den einen genau beobachtet und von dem anderen beiläufig einen Antritt in AR. genommen, seine Decl. aber nur gegen den ersten geschätzt. Solche Sterne sind vielfach in der B. D. mit B bezeichnet, und sie sind also auch wirklich am Meridiankreise beobachtet, jedoch in der angegebenen Weise nur genähert. Da Argelander diese Sterne später nicht in den Catalog in B. B. VI aufgenommen hat, so müssen jetzt die B bei ihnen gestrichen werden; es entspricht dies den Absichten von Argelander und von Schönfeld, vgl. B. B. VIII p. [56]. Dem widerspricht auch nicht, dass ausnahmsweise Sterne in B. B. VI mit genauer Declinationsangabe tatsächlich doch nur durch Schätzung (10″, 20″ . . bor. oder austr.) bestimmt sind; Argelander hat dann ersichtlich seine guten Gründe gehabt, die Schätzung für gleichwertig mit einer Einstellung zu halten und den Stern in B. B. VI aufzunehmen, der demgemäss sein B zu behalten hat. Die in dem Nachtrage in B. B. VI p. 369 bis 374 angeführten Sterne und die wenigen p. 367 und 368 am Meridiankreise bestimmten neuen Sternörter (die meisten Örter an dieser Stelle sind nur aus dem eigentlichen Catalog wiederholt) haben gleichfalls ein B erhalten; die ebenda heliometrisch an jene angeschlossenen Sterne der B. D. sind mit Bh bezeichnet. — Auch bei den B-Sternen, insbesondere bei den neu mit B bezeichneten sind kleinere Abweichungen der

B. D.-Örter von denen in B. B. VI nicht corrigiert worden, die Fälle ausgenommen, wo dies mit Rücksicht auf die richtige Angabe der relativen Lage gegen einen eingeschalteten nahen Nachbarstern geschehen musste; sonst sind hier in der Regel nur Abweichungen von etwa 1^s und $1'$ oder darüber berichtigt worden.

Die Catalognachweise nun etwa weiter auf alle neueren Sterncataloge auszudehnen, war allein schon technisch unmöglich auszuführen. Ich habe jedoch, um in der B. D. einen für viele praktische Zwecke wenigstens genügenden Nachweis von neuzeitlichen scharfen Örtern schwacher Sterne zu geben, erstens mit

> **a** bezeichnet die Sterne des A. G. C., die in den einzelnen Stücken desselben durch Einschluss ihrer B. D.-Nummer in [ ] — in Cambridge E. durch * hinter der B. D.-Nummer — als nicht zum speziellen Programm gehörig gekennzeichnet sind.

Die programmmässigen Sterne des Cataloges der Astronomischen Gesellschaft geben sich, abgesehen von einem geringen Bruchteil[1]), von selbst in der B. D. zu erkennen. Es genügt, sich zu diesem Zwecke zu merken, dass im A. G. C. einmal sämtliche Sterne bis 9^m0 incl. der B. D. vorkommen sollen, dass ferner die schwächeren mit Buchstaben — B jedoch ausgenommen — in der B. D. bezeichneten der Regel nach[2]) beobachtet sind, und dass endlich auch noch die B-Sterne in den fünf Zonen: Cambridge E., Lund, Cambridge M., Helsingfors-Gotha[3]) und Kasan[4]) in das Programm genommen sind.

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[1]) es werden dies namentlich diejenigen Sterne unter 9^m0 sein, bei denen in der B. D. statt des Buchstaben K oder A ein B steht, die jedoch der Beobachter des betreffenden A. G. C.-Stückes nach der Vorschrift in V. J. S. IV p. 305 — die aber nicht überall befolgt ist — durch genaue Vergleichung der Königsberger oder Argelander'schen Zonen als dort vorkommend ermittelt und dem Programm gemäss beobachtet und ganz richtig auch nicht in [ ] gesetzt hat. Es gilt dies z. B. für die Bonner Zone $+40°$ bis $+50°$; für diese hat deshalb Prof. Deichmüller die programmmässigen B-Sterne unter 9.0 jetzt nochmals aufgesucht, und sie sind als im Bonner A. G.-Catalog vorkommend gleichwie die Nichtprogrammsterne mit a bezeichnet. Desgleichen hat sich Christiania genau an das ursprüngliche Programm gehalten; hier habe ich 46 programmmässige und also nicht geklammerte B-Sterne unter 9.0 gefunden und mit a bezeichnet. — Andererseits sind in einzelnen Stücken des A. G. C. nicht selten Auslassungen in der Durchführung des speciellen Arbeitsprogrammes und Fehler bei der Einklammerung der B. D.-Nummern begangen worden; ich habe es mir nicht zur Aufgabe gestellt, solche durchgehends zu ermitteln, da dies sehr zeitraubende Nachforschungen erfordert haben würde. Offensichtliche Fehler der Identificierung oder Druckfehler der B. D.-Nummern in den A. G.-Catalogen habe ich jedoch berichtigt.

[2]) nach dem ursprünglichen Programm der Astr. Gesellschaft in V. J. S. IV p. 305 brauchten die R-Sterne unter 9.0, deren Zahl übrigens nicht sehr erheblich ist, nicht beobachtet zu werden; sie sind jedoch in allen Stücken des A. G. C. in das Programm genommen, mit Ausnahme allein von Nicolajew, Bonn und Christiania. Im Bonner Catalog sind sie zum Teil doch beobachtet, einige hiervon aber nicht mit [ ] bezeichnet; diese sind jetzt nachträglich von Deichmüller ermittelt und mit a bezeichnet worden.

[3]) mit Ausnahme der wenigen von Krüger in der Einleitung des A. G. C. Hels. p. (7) angegebenen zu schwachen B-Sterne. Krüger hat ausserdem alle Sterne 9.1 der B. D. (mit Ausnahme von fünf a. a. O. notierten) in sein specielles Programm genommen; auch diese sind mit a bezeichnet, und der Leser braucht also auf diese Besonderheit, die hier nur der Vollständigkeit halber erwähnt sei, nicht weiter zu achten.

[4]) in Kasan $+75°$ bis $+80°$ war anfangs das specielle Programm sogar auf alle Sterne der B. D. überhaupt ausgedehnt worden; es ist dies jedoch nicht durchgeführt. Andererseits fehlt in diesem Stück die Bezeichnung der Nichtprogrammsterne durch [ ] gänzlich; der Hinweis auf sie mit a ist deshalb hier unterblieben. Das letztere gilt auch von dem benachbarten Stück Dorpat $+70°$ bis $+75°$, weil dieses zur Zeit überhaupt noch nicht erschienen ist. Nördlich von $+70°$ kommt somit das Citat a nicht vor.

Zweitens sind mit

b bezeichnet alle Sterne des Bonner Cataloges für 1900.

Dieser Catalog selbst ist zwar zur Zeit noch nicht erschienen, aber seine Örter können vorläufig schon aus den Bonner Veröffentlichungen Nr. 4, 5 und 6 bequem entnommen werden. Sein Programm steht im engen Zusammenhange mit dem des A. G. C. und er enthält insbesondere noch mehrere Tausend schwacher B. D.-Sterne gerade an solchen Stellen des Himmels, wo weithin überhaupt keine A. G. C.-Sterne vorkommen, und wo der Beobachter sonst vergeblich nach einem Vergleichstern suchen wird.

Nachgetragen haben wir zunächst selbstverständlich die versehentlich in der B. D. ausgelassenen Sterne neunter Grösse oder heller, mit Ausnahme der Begleiter von helleren Sternen, die der Cometensucher getrennt nicht zeigen konnte. Die Nachtragungen sind unten am Rande geschehen und durch das Zeichen * ist an der zugehörigen Stelle im Sternverzeichnis auf sie hingewiesen. Weiter sind alle schwachen Sterne nachgetragen worden, die bereits an anderer Stelle: in B. B. VI, in den Astr. Nachrichten, im Bonner Catalog 1900 u. a. O. eingereiht und in üblicher Weise numeriert worden waren. In B. B. VI befinden sich darunter allerdings vielfach Begleiter von Doppelsternen; wir haben diese aber, da sie von Argelander mit besonderen Nummern einmal versehen waren, gegen die oben aufgestellte und sonst befolgte Regel beibehalten, um keine Verwirrung unter den nachgetragenen Nummern zu verursachen. Ersichtlich reine Zählfehler, die bei den Nummern in B. B. VI nicht selten vorkommen, sind richtig gestellt worden. Auch einige andere Sterne 9.10^{m}, die bei Gelegenheit der Durchmusterung nur einmal beobachtet und deshalb in die B. D. nicht aufgenommen waren, deren Existenz am Himmel aber durch andere Quellen, insbesondere durch den A. G. C., erwiesen wird, haben wir aus diesem oder jenem Grunde nachgetragen und zwar der Regel nach so, wie die Grösse und der Ort bei der Durchmusterung beobachtet ist. Es ist aber mit Absicht vermieden worden, die Zahl dieser nachgetragenen schwachen Sterne allzusehr anwachsen zu lassen. Bekanntlich sind in den Originalen der Durchmusterung eine sehr grosse Menge von nur einmal beobachteten Sternen 9.10^{m} verzeichnet; Argelander schätzt sie in A. N. 1765 p. 202 auf wenigstens 130000 bis 140000. Sehr viele, ja wohl die meisten von ihnen könnten jetzt durch neuere Verzeichnisse und Karten, namentlich auch durch die photographische Himmelskarte, soweit deren Catalog und einzelne Karten schon veröffentlicht sind, bestätigt und nachgetragen werden. Aus naheliegenden Gründen ist hiervon aber Abstand genommen. Die Ungleichförmigkeit, die in der Mitnahme der schwachen Sterne jetzt schon in der B. D. besteht, die jedoch dem Wesen einer solchen optischen Durchmusterung entsprechend im grossen und ganzen eine Function einfach der Sterndichte selbst ist, würde dadurch nur gesteigert und zu einer ganz willkürlichen und sprunghaften gemacht worden sein.

Die Zahl der im Text nachgetragenen Sterne beträgt im ganzen 727; darunter sind 98 Veränderliche, über die sogleich näheres gesagt werden wird, und nur 28 Sterne 9.0 oder heller, wenn die aus B. B. VI übernommenen und eigentlich nicht in die Durchmusterung gehörigen Begleiter hellerer Sterne nicht mitgezählt werden. Argelander selbst schätzte in der Einleitung zum ersten Bande p. XVII die Zahl der nach der Wahrscheinlichkeit vermutlich fehlenden Sterne neunter Grösse auf rund 30; eine Schätzung, die sich jetzt, da nur noch sehr wenige dieser Klasse fehlen werden, vollkommen bestätigt. Das Ziel: Vollständigkeit bis zur neunten Grösse, das sich Argelander und seine Mitarbeiter Schönfeld und Krüger bei der Durchmusterung gestellt hatten, ist also tatsächlich von ihnen in bewundernswerter Weise erreicht worden.

Ganz vollzählig sind die bis zum Druck der zweiten Auflage als sicher veränderlich nachgewiesenen Sterne angemerkt worden: die schon in der B. D. verzeichneten durch var an Stelle der Grösse, die übrigen durch Nachtrag unten am Rande. Massgebend ist dabei gewesen der dritte Catalog Veränderlicher Sterne von Chandler in A. J. 379 und das im Anschluss hieran von der Commission der A. G. in A. N. 3752 zusammengestellte Verzeichnis nebst seiner Fortsetzung in A. N. 3808, letztere soweit, wie es der bereits bis zur Mitte des 2. Bandes vorgeschrittene Druck noch erlaubte; die übrigen aus A. N. 3808 und einige später noch, bis zum Druck dieses Vorwortes, bekannt gewordene Veränderliche sind am Schluss unter den nachträglichen Berichtigungen aufgeführt. Nur in vereinzelten Fällen ist mit Absicht von den genannten Autoritäten abgewichen worden. Der in Chandler III verzeichnete Stern W Bootis = 34 Bootis = +27°2413 ist nach den zahlreichen photometrischen Beobachtungen von Müller und Kempf (Potsd. Publ. XIII p. 443) nicht veränderlich und habe ich ihn deshalb nicht mit var bezeichnet. Bei T Cygni = +33°4028 ist die Veränderlichkeit doch noch recht zweifelhaft; es ist daher ? hinter var gesetzt worden. Aus dem Verzeichnisse in A. N. 3752 ist TV Cygni = +46°2970 nach vielfachen Beobachtungen von Deichmüller nicht veränderlich und also nicht mit var bezeichnet. Dagegen erschien mir die Variabilität bei Ch. (857) = −0°365 erwiesen und der Stern hat var erhalten, während δ Orionis = −0°983 mindestens einer schwachen Veränderlichkeit stark verdächtig ist und deshalb mit var? gekennzeichnet ist.

Einige wenige der nachgetragenen Veränderlichen erreichen in ihrem Maximum nicht oder kaum die Helligkeit der schwächsten B. D.-Sterne und hätten demgemäss hier fortbleiben können. Ich habe vorgezogen, keinen Unterschied zu machen, und sie mitgenommen; ihre grösste Helligkeit ist einmal noch keineswegs immer so sicher festgestellt und sie kann ferner Schwankungen unterworfen sein, derart dass die Sterne in den helleren Erscheinungen doch in den Bereich der B. D., der ja auch nicht so fest nach unten abgegrenzt ist, kommen mögen. Ebenso sind der Vollständigkeit wegen auch die sogenannten „Neuen Sterne" aufgenommen und mit der Bezeichnung nova unten nachgetragen worden. Bei T Coronae = +26°2765, der „Nova" von 1866, die als 9^m5 schon in der B. D. vorkam, ist folgerichtig nur die Grösse durch var ersetzt.

Mit besonderer Vorsicht ist bei dem Streichen von vermissten Sternen verfahren worden. Die Fälle sind ja ziemlich zahlreich, in denen Sterne der B. D. am Himmel vermisst worden sind; aber selbst dann, wenn dies nicht blos einmal, sondern wiederholt und in verbürgter Weise geschehen ist, so kann aus diesem Grunde allein, falls sonst die Originale der B. D. zu Zweifeln keinen Anlass geben und die Existenz des Objectes zur Zeit der Durchmusterung verbürgt erscheinen lassen, der Stern noch nicht gestrichen werden, da zum mindesten immer noch die Möglichkeit vorliegen wird, dass man es mit einem Veränderlichen zu tun habe. Es sind deshalb der Regel nach nur solche Sterne gestrichen worden, die am Himmel vermisst wurden und bei denen alsdann durch genaue Revision der Originale unzweifelhaft festgestellt werden konnte, dass sie nur infolge von Versehen oder undeutlicher Schreibweise bei der Beobachtung oder von Fehlern bei der Bearbeitung in die B. D. gekommen waren. Blieben in dieser Hinsicht noch Zweifel bestehen, oder lag Verdacht der Veränderlichkeit vor, so haben wir ein Fragezeichen in die Columne der Buchstaben geschrieben, ausnahmsweise hinter die AR., wenn nur diese zweifelhaft war; bei bestimmtem Verdacht der Veränderlichkeit ist auch wohl ausdrücklich var? angemerkt worden.

Es ist ferner eine bekannte Tatsache, die jedoch bei manchen Angaben über vermisste Sterne der B. D. nicht immer genügend gewürdigt worden ist, dass sich unter den Sternen 9.4

und namentlich 9.5 der B. D. nicht wenige in Wahrheit sehr viel schwächere Sterne, bis herab zur 11. optischen Grösse der normal über 9.0 fortgesetzten Scale und selbst noch darunter, befinden. In den sternreichen Gegenden des Himmels wird dies seltener sein[1]), um so häufiger jedoch in den sternarmen, wo die Beobachter bei der Durchmusterung genügend Zeit hatten, auch noch die schwächsten im Cometensucher aufblitzenden Sternchen zu notieren. Oft ist dies nur einmal im Cometensucher unter besonders günstigen Umständen geschehen, das Object dann aber gelegentlich bei einer Revision an einem der grösseren Instrumente in Bonn oder auch durch eine andere Quelle z. B. den Markree Catalogue, Bond Equatorial Zones (wobei die Bemerkung Argelanders in der Einleitung zum ersten Bande p. XII über die Grössen dieser Cataloge zu beachten ist), Hind Ecliptical Charts etc. bestätigt worden und so in die B. D. gekommen. Das Vorkommen äusserst schwacher Sterne in der B. D. hat also wirklich gar nichts auffallendes, um so weniger aber dann, wenn etwa an der Stelle im Abstand bis zu einer, ja selbst bis zu zwei oder drei Bogenminuten — gering für den Cometensucher, sehr erheblich aber für Refractoren mit starker Vergrösserung — sich noch einer oder mehrere sehr schwache Sterne am Himmel vorfinden, deren durch die angewandte schwache Vergrösserung (Argelander nennt sie zehnmalig, sie ist jedoch nach B. B. VIII p. [8] tatsächlich sogar nur neunmalig gewesen) vereintes Licht genügt hat, im Auge des Durchmusterung-Beobachters den Anschein eines helleren Sternes zu erwecken. Es ist dies alles schon von Argelander selbst zu wiederholten Malen, in der Anzeige von einer zu Bonn unternommenen Durchmusterung, in den Einleitungen zur Durchmusterung und in seinen sehr lesenswerten Bemerkungen über die Bonner Durchmusterung in A. N. 1765, auseinandergesetzt worden und verweise ich nochmals ausdrücklich hierauf.

Gehörte nun weiter etwa ein solcher schwacher B. D.-Stern zum II. oder III. Spectraltypus, so würde es nicht verwunderlich sein, wenn er selbst auf ziemlich stark exponierten Photogrammen nicht oder nur als 12. oder 13. Grösse zu finden wäre. Eine erhebliche Anzahl von solchen photographisch vermissten oder sehr schwachen Sternen ist uns namentlich von Herrn E. C. Pickering in dankenswerter Weise mitgeteilt worden; wir haben uns jedoch — immer vorausgesetzt, dass die Originale der B. D. bei der stets vorgenommenen Revision in Ordnung gefunden wurden — aus den angegebenen Gründen nicht für berechtigt gehalten, die Sterne zu streichen. Es ist auch davon Abstand genommen, diese Sterne hier anzuführen, da bis jetzt die Vergleichungen zwischen der B. D. und photographischen Aufnahmen noch zu sporadisch und lückenhaft sind. Später, wenn eine solche Vergleichung in einheitlicher Weise für den ganzen Bereich der B. D. wird vorgenommen werden können, wird es am Platze sein, näher hierauf einzugehen. Unzweifelhaft werden sich dann für die B. D. als Ganzes und desgleichen für einzelne Sterne wichtige Folgerungen ziehen lassen.

Die Zahl der von uns gestrichenen Sterne beträgt im ganzen 61; darunter sind nur 16 Sterne 9.0 oder heller. Die Zahl dieser nicht am Himmel vorkommenden Sterne ist also noch geringer, als die der in B. D. fehlenden derselben Klasse, und die von Argelander in der Einleitung zum ersten Bande p. XVII ausgesprochene Vermutung über die Vollständigkeit der Durchmusterung erweist sich auch in dieser Hinsicht als völlig zutreffend.

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[1]) von den eigentlichen Sternhaufen, die wegen ihrer Sternfülle an den grösseren Instrumenten noch besonders durchmustert werden mussten, gilt dies aber nicht; hier kommen aus diesem Grunde auch sehr schwache Sterne als 9.5 in der B. D. vor. In den Plejaden z. B. haben Müller und Kempf nach A. N. 3587 sechs B.-D.-Sterne optisch-photometrisch unter 11.0 gefunden, darunter + 22°559 9.4 gleich 11.4 und + 24°544 9.5 gleich 11.8; merkwürdigerweise ist aber gerade der letzte zweimal regelrecht am Cometensucher selbst als 9.5 beobachtet.

Über die als nebula aufgeführten Objecte der B. D. und ferner über Sterne derselben, die in Wahrheit Nebelflecke (seien es Gasnebel, seien es als Nebel erscheinende Sternhaufen) sind, hat sich bereits Schönfeld in A. N. 1391 ausführlich geäussert. Es ergibt sich hieraus, dass auch in diesem Punkte nicht ganz gleichförmig in der B. D. verfahren ist. Zum Teil nämlich sind diese Objekte an den grösseren Instrumenten revidiert und hierin erst als Nebel erkannt worden und dann mit „neb" in der B. D. bezeichnet, obwohl der Cometensucher nur einen Stern gezeigt hatte. In vielen Fällen jedoch ist keine Revision vorgenommen und das Object, das tatsächlich ein Nebel ist, das im Cometensucher aber als ein Stern von bestimmter Grösse beobachtet war, ist als solcher in die B. D. gesetzt. Trotzdem erschien es mir nicht angezeigt, jetzt etwa den N. G. C. nachzuschlagen und bei allen „Sternen" der B. D., die sich aufgrund dieser Vergleichung als „Nebel" erwiesen, die Grösse durch neb zu ersetzen. Es gilt hier ähnliches, wie oben inbezug auf Doppelsterne und Paare oder Gruppen schwacher Sterne, die als ein Object in der B. D. auftreten, angeführt ist. Die B. D. spiegelt doch, trotz der erwähnten bei ihrer Beobachtung gemachten Revisionen des Himmels an grösseren Instrumenten und ihres Einflusses auf die Catalogisierung, in der Hauptsache den Himmel so wieder, wie er um 1855 in dem Cometensucher erschien, und es ist richtiger, dieses Bild möglichst ungestört und einheitlich zu erhalten, als es durch immer weitergehende Änderungen und Zusätze, bei denen schliesslich keine Grenze zu finden ist, aufgrund von Beobachtungen zu ganz anderen Zeiten und mit ganz verschiedenen Instrumenten, umzuwandeln. Es ist also bei Objecten, die in Wahrheit „Nebel" sind, die in der B. D. jedoch als Sterne von bestimmter Grösse beobachtet und verzeichnet sind, diese Grösse, die ausserdem ihren besonderen Wert hat, nicht durch die Bezeichnung neb ersetzt. Nur in wenigen Ausnahmefällen, wo entweder blosse Fehler des Hauptcataloges oder des Druckes vorlagen, oder wo sonst zwingende Gründe dafür sprachen, ist an Stelle der Grösse neb geschrieben worden.

Zur genäherten Übertragung von 1855 auf ein anderes Äquinoctium sind zehnjährige Praecessionen angegeben worden, berechnet immer für die mittlere Declination der betreffenden Grad-Zone. Bis Zone + 60° einschliesslich sind die Werte 10 pr. unter jede Spalte geschrieben und gelten für die mittelste Rectascension derselben, bei den vollständigen Spalten genau genommen für die Mitte zwischen dem 30. und 31. Stern. Für die höheren Declinationen wäre dieses Verfahren nicht mehr zweckmässig gewesen, weil dort die zu grossen und ungleichen Intervalle in AR. die Interpolation sehr erschwert hätten. Es sind deshalb von + 61° an die Werte 10 pr. in Täfelchen am Rande links und rechts zusammengestellt, und zwar bis + 69° von 20^m zu 20^m der AR., von + 70° bis + 79° von 30^m zu 30^m. Für die Polarzone + 80° bis + 90° musste auf die Angabe der Praecessionen verzichtet werden, da hier umfangreiche nach AR., Decl. und Zeit fortschreitende Tafeln erforderlich gewesen wären, für die kein Platz auf dem Original vorhanden war.

Während des Druckes der zweiten Auflage sind noch eine Anzahl von Berichtigungen der B. D., die im Druck nicht mehr berücksichtigt werden konnten, teils von uns aufgefunden, teils von anderer Seite uns mitgeteilt worden. Im Herbst 1902 erhielten wir noch von Herrn Ristenpart eine sehr umfangreiche Liste von Missstimmungen und vermutlichen Fehlern in B. B. VI zugesandt, die von Herrn Deichmüller an Hand der originalen Tagebücher des Meridiankreises eingehend geprüft worden ist und zu zahlreichen Verbesserungen der Sternörter in B. B. VI geführt hat; Herr Deichmüller wird darüber an geeigneter Stelle ausführlich berichten. Die stärkeren hierbei in B. B. VI sicher festgestellten Fehler haben insbesondere noch zu nachträglichen Berichtigungen der B. D. Veranlassung gegeben, da damals schon der zweite Band im Neudruck fast vollendet war. Ferner sind bei der Bearbeitung und bei dem

Druck der zweiten Auflage einige wenige Fehler untergelaufen, die also dieser allein anhaften und als solche leicht erkennbar sind. Alle diese nachträglichen Berichtigungen sind am Schlusse dieses Vorwortes zusammengestellt und ich bitte den Leser, sie vor Benutzung der zweiten Auflage im Text anzubringen.

Endlich ist noch angehangen eine Liste von 526 „Neuen" Königsberger Sternen, die mir von Herrn Auwers zur Veröffentlichung an dieser Stelle im Dezember 1902 freundlichst zur Verfügung gestellt worden ist. Diese Sterne sind beobachtet in 14 bisher unbekannt gebliebenen Besselschen Zonen, die neuerdings aufgefunden und von Herrn Auwers reduciert worden sind. Im ganzen enthalten diese Zonen ca. 1500 Sterne, von denen jedoch zwei Drittel auch in den alten bekannten Königsberger Zonen vorkommen und dementsprechend in der B. D. bereits mit K bezeichnet sind; bei den neu hinzugekommenen und unten angeführten 526 Sternen kann nunmehr K nachgetragen werden.

Bonn, im Februar 1903. **F. Küstner.**

Nachträgliche Berichtigungen zur B. D. und Druckfehler der 2. Auflage.

Erster Band.

Seite

42 + 0°3200 B durchstreichen.
48 + 0.4962 K durchstreichen, a hinzufügen.
54 + 1.1564 statt $41^{s}0$ lies $43^{s}1$.
81 + 2.4448 statt $40^{s}5$ 3'9 lies $38^{s}3$ 5'8 B.
82 + 3. 171 B durchstreichen.
82 + 3. 172 B nicht durchstreichen.
87 + 3.1652[a] a hinzufügen.
88 + 3.1726 statt $9^{m}2$ 44'0 lies $9^{m}4$ 43'5.
88 + 3.1727[a] $9^{m}2$ 7^{h} 27^{m} $33^{s}4$ + 3°47'4 nachtragen.
88 + 3.1956 B durchstreichen.
99 + 4. 67 B nicht durchstreichen.
99 + 4. 68 B durchstreichen.
106 + 4.2289 $9^{m}2$ $9^{h}58^{m}42^{s}0$ + 4° 31'8 nachtragen.
106 + 4.2290 statt $9^{m}3$ $46^{s}9$ 32'1 lies $9^{m}5$ $49^{s}4$ 31'8.
111 + 4.3650 B durchstreichen.
115 + 4.4993 statt $26^{s}0$ 22'5 lies $24^{s}3$ 23'8.
162 + 7.3199 Gr. lies var.
170 + 8. 211[a] statt $1^{s}0$ lies $21^{s}0$.
174 + 8.1414 statt $0^{s}9$ lies $1^{s}9$.
174 + 8.1417 statt $16^{s}2$ lies $17^{s}2$.
181 + 8.3411 statt $31^{s}7$ lies $32^{s}4$.
195 + 9.2316 ? hinzufügen.
203 + 9.4813 statt 29'1 lies 27'1.
204 + 9.5095 ? hinzufügen.
224 + 11. 775 B durchstreichen.
231 + 11.2886 B durchstreichen.
240 + 12. 372 K durchstreichen.
240 + 12. 373 K nachtragen.
254 + 12.4404 var? anmerken.
264 + 13.2007 a tilgen. [RS Peg.
273 + 13.4866[a] ist sehr wahrscheinlich identisch mit
288 + 14.3881 statt K lies L.
289 + 14.4375 var? anmerken.
306 + 15.4266[a] $9^{m}5$ 20^{h} 42^{m} $24^{s}6$ + 15° 14'9 nachtragen.
323 + 16.4290 Gr. lies var. [tragen.
323 + 16.4370[a] $9^{m}3$ 20^{h} 41^{m} $16^{s}1$ + 16° 7'0 var? nach-
344 + 18. 368[a] $9^{m}5$ 2^{h} 44^{m} $55^{s}8$ + 18° 43'6 nachtragen.
345 + 18. 589 statt K lies L.
347 + 18.1380 statt K lies B.
350 + 18.2147 statt K lies R.
354 + 18.3424 B durchstreichen.

Zweiter Band.

Seite

5 + 20°1269 R hinzufügen.
5 + 20.1318 R hinzufügen.
6 + 20.1537 R hinzufügen.
6 + 20.1538 R hinzufügen.
6 + 20.1660 R hinzufügen.
17 + 20.4968 R hinzufügen.
19 + 20.5374 B nicht durchstreichen.
23 + 21.1108 R hinzufügen.
23 + 21.1270[a] B hinzufügen.
24 + 21.1335 R hinzufügen.
58 + 23.1503[a] $9^{m}2$ 6^{h} 40^{m} $20^{s}5$ + 23° 17'0 nachtragen.
81 + 24.3447 statt 2'4 lies 1'4, ist in 2. Aufl. zu Unrecht corrigiert.
81 + 24.3449 statt 3'2 lies 2'2, ist in 2. Aufl. zu Unrecht corrigiert; es ist B. D. richtig, dagegen B. B. VI falsch.
85 + 24.4462 Gr. lies var.
88 + 25. 391 statt 10'2 lies 10'8.

Seite

97 + 25.2961 statt 18'2 lies 16'9.
97 + 25.2964 statt 25'2 lies 24'2.
101 + 25.4374 statt $32^{s}8$ lies $22^{s}8$.
104 + 25.5047 statt 32'0 lies 30'0.
104 + 25.5048 statt 34'2 lies 32'2. [halten 4^{m}.
111 + 26.2057 AR. statt 4^{m} lies 5^{m}; 2058, 2059 be-
122 + 27. 363 statt K lies L.
128 + 27.2136 statt 56'3 lies 58'3.
129 + 27.2510 statt 42'1 lies 41'1.
131 + 27.3018 statt $31^{s}1$ lies $41^{s}1$.
131 + 27.3027 statt $25^{s}4$ lies $35^{s}4$.
141 + 28.1298 statt 50'2 lies 52'3.
142 + 28.1563 statt 4'9 lies 6'9.
154 + 29. 343 K hinzufügen.
154 + 29. 405 statt 6'5 lies 8'5.
158 + 29.1423 statt $35^{s}6$ lies $45^{s}6$.
161 + 29.2585 statt $57^{s}1$ lies $55^{s}6$.
162 + 29.2632 AR statt 3^{m} lies 4^{m}.
162 + 29.2633 AR statt 3^{m} lies 4^{m}, a als überflüssig tilgen.
167 + 29.4231 Gr. lies var.
167 + 29.4240[a] var $20^{h}50^{m}23^{s}$ + 29°52'6 nachtragen.
168 + 29.4469 a hinzufügen.
172 + 30. 420[a] $9^{m}5$ 2^{h} 29^{m} $39^{s}8$ + 30° 5'5 nachtragen.
189 + 31. 366[a] $9^{m}5$ $1^{h}58^{m}$ $47^{s}8$ + 31° 3'0 nachtragen.
194 + 31.1768 statt 7'1 lies 6'1.
194 + 31.1771 statt 1'5 lies 0'5.
213 + 32.2201 statt $37^{s}9$ lies $35^{s}2$.
227 + 33.1429[a] $9^{m}5$ 6^{h} 46^{m} $1^{s}5$ + 33° 45'4 nachtragen.
227 + 33.1455 statt $11^{s}4$ 18'6 lies $9^{s}5$ 24'5.
234 + 33.3581[a] lies 3582[a].
234 + 33.3582 statt $4^{s}6$ lies $2^{s}9$.
241 + 34. 748 statt 41'2 lies 42'2.
246 + 34. statt 2117[a] $29^{s}7$ 53'7 lies 2119[a] $41^{s}2$ 52'4.
246 + 34.2119 statt $41^{s}8$ lies $33^{s}0$.
254 + 34.4595[a] var 21^{h} 57^{m} 51^{s} + 34° 25'3 nachtragen.
328 + 39. 530 statt $49^{s}7$ lies $39^{s}8$.
333 + 39.1986 statt 55'8 lies 55'2.
355 erste Spalte 10 pr. statt + 0'18 lies — 0'18.
360 + 40°4753 statt $24^{s}6$ lies $25^{s}6$.

Dritter Band.

Seite

55 + 44°1299 statt $36^{s}1$ 41'3 lies $36^{s}9$ 42'0.
55 + 44.1301 statt $41^{s}0$ 46'5 lies $41^{s}8$ 47'2.
63 + 44.3585 var? anmerken.
87 + 46.1670 statt 33'8 lies 32'8.
130 + 49.1001 statt 44'0 lies 43'0.
185 + 53. 979 die bor. praec. Componente ist var.
212 + 55.2135 statt $17^{s}5$ lies $23^{s}0$.
220 + 56.1400 Gr. lies var.
235 + 57.2594 var? anmerken.
236 + 57.2861 statt $8^{m}5$ $12^{s}5$ 22'3 lies $9^{m}0$ $18^{s}5$ 23'4.
236 + 57.2864[a] $8^{m}9$ 23^{h} 58^{m} $22^{s}5$ + 57° 22'1 nachtragen.
259 + 60. 982 statt $18^{s}6$ 39'0 lies $20^{s}1$ 37'8 Bh.
266 + 61. 293 statt 34'5 lies 33'5.
269 + 61.1250 statt 54'7 lies 52'7.
341 + 73. 533 Gr. lies var.
353 + 76. 537 B in 2. Aufl. löschen (in B. B. VI lies 536 statt 537).
358 + 78. 9[a] ergänze a.
358 + 78. 13[a] ergänze a.
359 + 78. 227[a] ergänze a.
359 + 78. 314[a] var 9^{h} 25^{m} 47^{s} + 78° 30'1 a nachtragen.
364 + 79. 744[a] ergänze a.

Neue Königsberger Sterne.

16h 358
457
487
535
551
553

17. 438
490
517
539
541
550
595
614
625
632

18. 368
368a
390
393
398
399
419
430
461
531
557
566
589

19. 587
645

26. 392
393
420

27. 333
352
363
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411
412
428

28h 271
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328?
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451
561

29. 249
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432a
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29h 453
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30. 224
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30h 337
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31h 288
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360a
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4176
4220
4225
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4297
4309
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4402
4534
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32h 281
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365

32h 394
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4161
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4232
4249
4306
4321
4345

33. 276
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33h 1065
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1407
1408
1422
1427
1429a
1445
1450
1455
1472
3908
3922
3931
4003
4168
4221
4252
4307
4350

34. 938
954
963
1024
1031
1035
1079
1091
1100

34h 1109
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1336
1400
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35. 1412
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1417

38. 1049
1087
1396
1602

39. 1170
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39h 1579
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40. 1153
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41. 96
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42. 139
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42h 188
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43. 147
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1311
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1402
1410
1483
1521
1588a
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43h 1604
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44. 1128
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Einleitung.

Es war ursprünglich die Absicht, im dritten Bande der Bonner Beobachtungen zwei verschiedene Beobachtungsreihen zu veröffentlichen, nämlich die seit dem Jahre 1838 angestellten Vergleichungen der veränderlichen Sterne mit ihnen nahe stehenden unveränderlichen, sodann ein nach den Rectascensionen geordnetes Register über sämmtliche Sterne der südlichen Zonen und diejenigen, welche zur Vervollständigung derselben in den Jahren 1852 bis 1854 beobachtet worden sind. Diese Vervollständigung umfasst alle solche Sterne derselben, die mit irgend einem Zweifel behaftet erschienen, etwa 400, so wie alle Sterne von Lacaille und Lalande, die im Bereiche jener liegen, in ihnen aber nicht vorkommen; ihre Zahl beträgt ungefähr 1600.

Die inzwischen vorgenommene Durchmusterung des nördlichen Himmels Behufs der neuen Sterncharten hat aber meine ganze Thätigkeit so sehr in Anspruch genommen, dass ich weder Zeit gefunden habe, die Reduction der erwähnten Beobachtungen auszuführen, noch auch die letzte Hand an die Berechnung der veränderlichen Sterne zu legen, ohne welche ich die Beobachtungen selbst nicht geben mag. Auch erscheint es wünschenswerther, die, wenn auch ziemlich rohen, Positionen der Sterne, welche die Durchmusterung geliefert hat, sobald als möglich bekannt zu machen, zumal dadurch zugleich alle die zahlreichen Fehler berichtigt werden, die in den früheren Catalogen noch enthalten sind. Daher ist denn in dem gegenwärtigen Bande das vollständige Verzeichniss aller derjenigen Sterne abgedruckt, welche der Bonner Atlas des nördlichen gestirnten Himmels in seiner ersten Section, d. h. zwischen den Gränzen von zwei Grad südlicher und zwanzig Grad nördlicher Declination enthält; die Zahl derselben ist 110985 oder ungefähr 14 auf den Quadratgrad.

Die Methode, nach welcher die Beobachtungen angestellt und die Positionen daraus berechnet sind, so wie den Grad der Sicherheit, welchen man von den letzern zu erwarten berechtigt ist, habe ich in einer eigenen kleinen Schrift:

> Anzeige von einer auf der Königlichen Universitätssternwarte zu Bonn unternommenen Durchmusterung des nördlichen Himmels als Grundlage neuer Himmelscharten. Bonn 1856. 8°.

ausführlich auseinander gesetzt. Da dieselbe aber nicht in den Buchhandel gekommen ist, so erscheint es räthlich das hierhergehörige daraus zu wiederholen, und wo es nöthig ist, zu vervollständigen.

Das Ziel, welches zu erreichen ich mir vorgesetzt hatte, war folgendes:

Die Charten sollten den ganzen nördlichen Himmel umfassen. Ich beabsichtigte Anfangs bedeutend weiter nach Süden zu gehen, bis zum Wendekreise des Steinbocks oder selbst bis 25° südlicher Declination, und es sind nicht unbeträchtliche Vorarbeiten auch in diesem südlichen Theile des Himmels gemacht. Aber obgleich wir zu diesen die dunkelsten Nächte und die durchsichtigste Luft wählten, zeigte sich doch bald, dass die Absorption der Lichtstrahlen in diesen Gegenden zu bedeutend war,

um die schwächeren Sterne mit Sicherheit zu beobachten, und somit diesen Theil der Arbeit auch nur annähernd in Uebereinstimmung mit dem andern zu bringen. Hierzu kam, da diese südlichen Gegenden nur im Meridian und unter besonders günstigen Umständen durchmustert werden durften, die Befürchtung, dass die vorgesetzte Zeit bei weitem nicht ausreichen würde, um diesen südlichen Theil zu vollenden. So beschloss ich denn, auf den nördlichen Himmel mich zu beschränken, in der Hoffnung, dass auf irgend einer der Sternwarten der andern Hemisphäre ein ähnliches Werk für den südlichen Himmel werde vorgenommen werden. Um aber, wenn meine Hoffnung in Erfüllung ginge, die beiden sich ergänzenden Arbeiten mit einander vergleichen zu können, nahm ich die beiden ersten Grade südlicher Declination noch mit.

Innerhalb dieses Raumes sollten die Charten alle Sterne bis zur 9ten Grösse hinab enthalten, möglichst alle hellern der 9. 10m und so viele der übrigen dieser Classe als die Umstände erlaubten, hingegen keinen der nicht wirklich vorhanden ist. Die Grössen sollten nicht über halbe Classen, die Positionen in beiden Coordinaten nicht bedeutend über eine Minute fehlerhaft sein, damit ein jeder Stern der Charten sogleich in Meridianinstrumenten wiedergefunden werden könne, und bei nahen Sternen kein Zweifel obwalte, welcher gemeint sei; es mussten also auch alle gröberen Fehler in den vorhandenen Sternverzeichnissen erkannt und berichtigt werden, sowohl in Beziehung auf die Grössen als auf die Positionen.

Dieses Ziel zu erreichen schien mir die bei Anfertigung früherer Himmelscharten befolgte Methode nicht hinreichend zu sein. Sie besteht bekanntlich darin, dass die durch Beobachtungen bestimmten Sterne nach ihren richtigen Positionen in das Netz eingezeichnet und dann die unbekannten entweder nach dem Augenmasse oder nach approximativen an irgend einer Micrometervorrichtung erhaltenen Bestimmungen nachgetragen werden. Diese Methode hat mehrere Nachtheile: der Beobachter muss bald die erleuchtete Charte ansehen, um darauf die bekannten, bald den dunkeln Himmel, um an diesem die unbekannten Sterne aufzusuchen. Dieser häufige Wechsel von Licht und Dunkel stumpft nicht nur das Auge für schwächere Lichteindrücke während der Beobachtung ab, sondern schadet ihm auch bleibend, schwächt die Fähigkeit der Pupille sich auszudehnen und zusammenzuziehen, und bewirkt allmälig, dass zu dieser Function eine unverhältnissmässig lange Zeit erfordert wird. Will man diesem Uebelstande dadurch einigermassen abhelfen, dass man das Auge bei dem Uebergange von dem Dunkel zur Helligkeit sich allmälig an dieselbe gewöhnen lässt, so geht darüber ausserordentlich viel Zeit verloren, und man setzt sich der Gefahr aus, die genaue Gestaltung der Configurationen aus der Erinnerung zu verlieren und dann, da sich die Sterne in der Zwischenzeit bedeutend fortbewegt haben, die schwächeren nicht wiederzufinden. Bei dem sonst sehr vorzüglichen Steinheilschen Netzmicrometer wird ausserdem die Erkennung und besonders die Beobachtung dieser letztern durch die Erleuchtung des Micrometers sehr erschwert. Die Positionen der Sterne werden selbst bei Anwendung des Netzmicrometers nicht so genau als zu wünschen ist, und die Erfahrung bei den auf diese Art gezeichneten Charten zeigt, dass besonders die Rectascensionen sehr bedeutend fehlerhaft werden. Die Schätzung der Grössen wird schwieriger, da bei dem häufigen Uebergange von dem Fernrohre zur Charte und zurück das Auge nicht die gleiche Lichtempfänglichkeit behält und ein sicheres Bild von einer bestimmten Grössenclasse sich nicht leicht bilden kann. Man ist dabei gezwungen fortwährend mit bekannten oft ziemlich entfernten Sternen zu vergleichen, und hierbei tritt nicht nur die bekannte Erscheinung hindernd entgegen, dass man von der Seite angesehene Sterne heller schätzt, sondern man wird auch verleitet, sich durch fehlerhaft angegebene Grössen der bekannten Sterne beirren zu lassen. Kleinere Fehler in den Positionen dieser und in sternarmen Gegenden selbst solche von mehreren Minuten bleiben unentdeckt und üben wieder auf die Positionen der zu bestimmenden nachtheiligen Einfluss aus, andrer kleinerer Nachtheile nicht zu gedenken.

Von allen diesen Mängeln scheint der Steinheilsche Astrograph*) frei zu sein; ich sage scheint, da ich dies Instrument nie gesehen habe, es auch, so viel mir bekannt ist, bisher nur einmal von Herrn U. Pohrt zur Entwerfung einer kleinen Charte der nächsten Umgebungen des Pols benutzt worden ist. Bei der Anwendung im Grossen würden sich aber sicher noch viele Schwierigkeiten darbieten, denen abzuhelfen nicht Jeder so geschickt sein dürfte, als der geistreiche Erfinder selbst. Was mich aber besonders abhielt, dies Instrument zu wählen, war der Umstand, dass damit die Positionen der Sterne nicht mit der nöthigen Genauigkeit auf dem Papiere niedergelegt, und noch schwieriger wieder von demselben entnommen werden können, um die oben geforderte Sicherheit derselben zu erreichen.

Deshalb entschloss ich mich dazu, wirkliche Positionen der Sterne nach Rectascension und Declination zu bestimmen, welche in Beziehung auf Genauigkeit der eben gestellten Bedingung entsprächen. Nach mehrfachen Versuchen bin ich bei der folgenden Beobachtungsmethode geblieben:

Ein Fraunhoferscher Cometensucher von 34 Linien Oeffnung, 24 Zoll Brennweite und 10maliger Vergrösserung ist unter der Drehkuppel des Südthurms der Sternwarte, an einer starken gusseisernen Säule parallactisch aufgestellt. Der Stundenkreis giebt durch den Nonius 2 Zeitsecunden, der Declinationskreis eine Bogenminute. Die Aufstellung des Instrumentes ist sehr nahe berichtigt und wird durch zwei an der Säule angebrachte Libellen controllirt. Der Stand dieser Säule ist ein sehr fester und für den vorliegenden Zweck als unveränderlich anzusehen. Das Fernrohr hat durch Vertauschung des ursprünglichen Oculars mit einem orthoscopischen des leider zu früh verstorbenen Opticus Kellner in Wetzlar bedeutend an Lichtstärke gewonnen, sowie sein Gesichtsfeld an Ausdehnung, indem das neue Ocular keine Blendung hat und volle sechs Grade zu übersehen erlaubt. In dem Focus des Oculars ist eine halbe Kreisfläche von dünnem Planglase befestigt, so dass der sie begränzende Durchmesser dem Declinationskreise entspricht. Diese Begränzung ist matt abgeschliffen und bildet im Fernrohre eine dünne dunkle Linie, die selbst bei völliger Abwesenheit aller künstlichen Beleuchtung allein durch das Sternenlicht gut erkennbar ist; sie mag der Stundenstrich heissen. Senkrecht auf diese ist über die ganze Glasfläche ein Halbmesser gezogen, der Mittelstrich, und diesem parallel auf jeder Seite in Abständen von nahezu 7 Bogenminuten von einander 10 kürzere Striche, jedoch so, dass zur leichtern Unterscheidung jeder dritte etwas länger ausgezogen ist, die Declinationsstriche. Diese bei vollkommener Dunkelheit sichtbar zu machen, hat viele Schwierigkeiten gemacht; ich habe versucht, die Striche in das Glas einzuätzen, mit schwarzer Farbe einzubrennen, auch abwechselnd einen ganzen Zwischenraum dunkel zu machen, während der andere hell bleibt, aber Alles ohne günstigen Erfolg. Ich bin endlich dabei stehen geblieben, diese Striche mit dicker schwarzer Oelfarbe auf das Glas aufzutragen; sie sind dadurch freilich etwas ungleich geworden und ungefähr $1\frac{1}{2}$ Minute breit; indess vergrössern diese Uebelstände den reinen Beobachtungsfehler, wie der Erfolg gezeigt hat, kaum merkbar, und es wird im Ganzen nur sehr unbedeutend an Genauigkeit verloren.

Der eigentliche Beobachter, der mit A bezeichnet werden mag, sitzt oder liegt, je nach der Höhe der zu beobachtenden Zone, auf einem Stuhle, dessen bewegliche Rücklehne so gestellt werden kann, dass bei vollkommen bequemer Lage des Körpers das Auge unmittelbar an dem Oculare ist, und bequem ohne sich bedeutend hin und her zu bewegen etwas mehr als zwei Grade in Declination übersehen kann. Künstliche Beleuchtung befindet sich in dem Zimmer nicht, und gegen die äussere des Himmels ist das Auge durch einen Schirm von schwarzer Pappe geschützt, der das Fernrohr am Ocularende umgiebt, und am Objectivende durch einen Ring contrebalancirt wird. Um das Ocular vor dem Be-

*) Astr. Nachr. XI. p. 148 ff. und Schuhmachers Jahrbuch für 1844 p. 6 ff.

schlagen zu schützen, oder vielmehr um jeden bemerkbaren Anflug sogleich fortzuschaffen, ist die Fassung desselben an zwei entgegengesetzten Stellen durchbrochen, deren eine durch einen Kautschukschlauch mit einem Blasebalge in Verbindung gebracht ist. Ein Paar Züge an einer Schnur, durch welche der mit einer Feder versehene Blasebalg in Bewegung gesetzt wird, reichen hin, um den Zweck zu erreichen. Unter dem Beobachtungszimmer, von diesem nur durch einen Bretterboden geschieden, ist in einem zweiten eine Sternzeit zeigende Pendeluhr, Tiede Nr. 37, aufgestellt, vor der ein zweiter Beobachter, B, so sitzt, dass er die Uhrscheibe unmittelbar vor Augen hat.

Vor dem Anfange der Beobachtungen wird zunächst der Declinationskreis auf die mittlere Declination der zu beobachtenden Zone festgeklemmt, und durch den Stundenkreis das Fernrohr auf die Anfangsrectascension gestellt. Um jeden Irrthum zu vermeiden wird gern ein heller Stern oder eine leicht kenntliche Gruppe zum Anfange gewählt. Nachdem dann A sich vor das Fernrohr gesetzt und Alles in Ordnung gebracht hat, nimmt B die Lampe fort und schliesst die Fallthüren nach dem Beobachtungszimmer. Bis auch dieser sich auf seinem Platze vor der Uhr eingerichtet hat, ist die nöthige Zeit vergangen um das Auge von A an die Dunkelheit zu gewöhnen, und es für die feinsten Lichteindrücke empfänglich zu machen. Die Beobachtung beginnt. Sowie die Sterne durch die tägliche Bewegung des Himmels nach einander an den Stundenstrich geführt werden, bemerkt A die Grösse aller, die in der Zone von $1^{o}5'$ oder $1^{o}10'$ zu beiden Seiten des Mittelstriches an jenen antreten *), ihr Verschwinden hinter demselben und den Declinationsstrich so wie das Zehntheil des auf ihn folgenden Zwischenraums, an dem dieses Verschwinden vor sich geht, wobei die beiden Seiten von dem Mittelstriche durch + und — unterschieden werden. Die letztere Beobachtung notirt A selbst, ohne das Auge vom Fernrohr zu nehmen, auf einem quergehaltenen Octavblatte. Um das Ineinanderschreiben der Zahlen zu vermeiden, ist dieses Blatt zwischen einen festen Pappendeckel und einen daran durch ein Scharnier befestigten Rahmen mit 4 senkrechten, ziemlich breiten Leisten eingeklemmt; in die durch diese Leisten gebildeten 5 senkrechten Columnen werden die Zahlen nach einander eingeschrieben, indem die Hand langsam hinuntergleitet, bis eine Columne voll ist, und dann zur nächsten übergegangen wird. Ist das Blatt vollgeschrieben, so wird es mit dem ganzen Rahmen in ein Fach eines neben dem Beobachter stehenden Tisches gelegt, und aus einem zweiten ein neuer Rahmen mit seinem vorher schon eingeklemmten Papiere genommen. Die Zeit und Grösse notirt A nicht selbst, sondern zeigt beides dem B dadurch an, dass er in dem Augenblicke des Verschwindens eines Sterns die die Grösse desselben bestimmende Zahl kurz ausruft, wobei der Kürze wegen die 9. 10te Grösse durch Null, die 8. 9te durch Halb bezeichnet wird. B schreibt nun die Secunde oder auch halbe Secunde des Ausrufs in die erste, die Grösse in die zweite Columne eines Buches, des Originalheftes, ein, dessen andere Columnen später werden beschrieben werden. Um von Zeit zu Zeit eine Controlle für die Uebereinstimmung der beiderseitigen Notirungen zu haben, giebt A es regelmässig an, wenn er ein Blatt beendigt hat, und B macht dann in seinem Buche einen Strich. Ein solcher Strich wird aber auch jedesmal von beiden Beobachtern gemacht, so oft irgend eine Störung oder ein anderer Umstand zu der Befürchtung Veranlassung giebt, es könne ein Ruf des A von B überhört, oder ein anderer Laut für einen Ruf gehalten worden sein. In die Declinationsoriginale werden von A aber auch noch einzelne andere Bemerkungen eingetragen, die für die häufiger vorkommenden Fälle durch bestimmte Zeichen angegeben werden. Solche betreffen vornehmlich die Grösse, indem die hellern Sterne einer Grössenclasse durch ein hin-

*) In den nördlicheren Theilen des Himmels, etwa vom 50ten Grade der Declination an, in den sternreicheren Gegenden später, in den ärmeren früher, wurden die Zonen $8^{o}10'$ bis $3^{o}20'$ breit beobachtet, und ist für diese ein neues Netz hergerichtet worden, bei dem die Declinationsstriche nahe 10 Minuten von einander entfernt sind.

tergeschriebenes gt (gut), die schwächern durch s (schwach) unterschieden werden, oder die Duplicität die auf einen Abstand von ein paar Minuten ausgedehnt und durch d bezeichnet wird. Bei der Schnelligkeit, mit der die Sterne sich folgen, wenn in sehr reichen Gegenden 5,6 fast zu gleicher Zeit an den Stundenstrich antreten, ist es dem Beobachter A nicht immer möglich, sie alle vollständig zu beobachten. Zuweilen ruft er dann zwar die Grösse beim Antreten aus, notirt aber nur den ganzen Declinationsstrich oder auch nur die Seite, auf welcher der Stern verschwand, durch +x oder —x. Wenn dann später Zeit vorhanden ist, sucht er den Stern hinter dem Stundenstriche wieder auf, bestimmt die Declination genauer und trägt nach —x oder +x= was er nun abgelesen hat; dass hierbei wohl hin und wieder Verwechselungen mit andern vollständig beobachteten Sternen vorkommen, ist nicht zu verwundern, besonders wenn der Stern genau hinter einem Declinationsstriche, zumal einem der längern, fortläuft und erst spät wieder sichtbar wird, wo dann das Nachtragen wohl ganz vergessen wird. So kommt es, dass manche Sterne unvollständig beobachtet bleiben. In andern Fällen beobachtet A die Sterne beim Antritt an den Stundenstrich gar nicht, sondern notirt erst später die Declination und ruft die Grösse aus, dann schätzt er die seit dem Antritte verflossene Zeit und schreibt seiner Beobachtung —10ˢ, —15ˢ oder wieviel die Schätzung angab, bei, wodurch die Rectascension unsicher wird. Zuweilen wird die Auslassung eines Sterns auch nur durch ein σ angedeutet, wenn es geht, mit hinzugefügter Grösse und wenigstens dem ganzen Declinationsstriche. Es kommt aber auch der entgegengesetzte Fall vor, nämlich dass ein Stern schon einige Secunden vor dem Antritt und dann bei diesem noch einmal beobachtet wird. Solche Doppelbeobachtung ist aber zuweilen auch die Folge einer optischen Täuschung. Die Kellnerschen Oculare, wenigstens diejenigen, die ich zu prüfen Gelegenheit gehabt habe, leiden, neben ihren unbestreitbaren Vorzügen, an der Unvollkommenheit, dass sie die Sterne in einem Abstande vom Rande, der etwa einem Drittheile des Radius gleichkommt, doppelt zeigen. Dies wirkt auf unsere Beobachtungen nicht störend ein, da wir dem Rande nicht so nahe kommen. Es scheint aber diese Duplicität hin und wieder auch an andern Punkten vorzukommen, wenn auch nur bei gewissen Stellungen des Auges. Bemerkt A eine solche Doppelbeobachtung mit Sicherheit, so schreibt er zu der zweiten Beobachtung id (idem) und versieht die Anmerkung mit einem ?, wenn er seiner Sache nicht ganz sicher war; es tritt dieser Fall aber nur bei sehr schwachen Sternen ein. Ein ? allein hinter die Declination gesetzt, bedeutet, dass A sich erinnert, bei derselben einen Stern kurz vor dem Stundenstriche gesehen zu haben, den er nicht wieder finden konnte, als er eintreten musste; auch solche Sterne sind meistens sehr schwache, und ihre Rectascension dann gewöhnlich etwas zu gross; zuweilen hatte auch die Erinnerung getäuscht. Ist A über das Zehntheil der Declination unsicher, so wird dies durch : ausgedrückt, hingegen durch p, wenn der Zweifel sich auf den ganzen Declinationsstrich bezieht. Auf diese Weise wird die Beobachtung, wenn nicht etwa wegen Trübung des Himmels oder aus andern Ursachen früher geschlossen werden muss, eine Stunde oder ein paar Minuten länger, nur in sehr seltenen, durch besondere Umstände herbeigeführten Ausnahmefällen über fünfviertel Stunden lang fortgesetzt, damit nicht Uebermüdung eintrete und der Genauigkeit der Beobachtung schade. Sobald A den Schluss angezeigt hat, zieht B an einer nach dem Arbeitszimmer der Sternwarte gehenden Schelle, um das zweite Beobachterpaar zur Ablösung herbeizurufen, während A die Kreise abliest und B ihre Angaben notirt. Damit ist die Beobachtung geschlossen, die nun in dem Arbeitszimmer sogleich controllirt wird, indem A die einzelnen vollgeschriebenen Blätter auf der Rückseite der Reihe nach mit a, b, c, u. s. w. bezeichnet, das Datum und die laufende Nummer der Zone hinzufügt, zugleich die auf jedem Blatte enthaltenen Sterne zählt, diese Zahl mit der von B notirten vergleicht, und auf der Rückseite des Blattes auch die laufende Nummer in der Zone des ersten und letzten Sternes dieses Blattes angiebt. Bei diesen Vergleichungen zeigt sich dann, besonders in sehr reichen Zonen, zuweilen ein Mangel an

Uebereinstimmung, indem der eine Beobachter, gewöhnlich A, einen Stern mehr hat. Oft weiss dann der eine oder der andere aus der frischen Erinnerung eine Stelle anzugeben, wo die Missstimmung wahrscheinlich eingetreten ist, was die spätere schärfere Untersuchung sehr erleichtert. Auch kennen dann beide Beobachter noch die Bedeutung ungewöhnlicher, oft nur durch wenige Buchstaben angedeuteter Bemerkungen, die sie während der Beobachtung gemacht haben, und die besonders bei A wohl vorkommen, und sich dann gewöhnlich auf Zweifel über die angegebene Grösse, über den Theilstrich oder das Zeichen beziehen. Sobald es die Zeit erlaubt, wenn irgend möglich am folgenden Tage, trägt A die Zahlen aus den Declinationsoriginalen in die 3te Columne, alle übrigen Bemerkungen in die letzte der Originalhefte ein, wobei sorgfältig darauf gesehen wird, gleichfalls in der letzten Columne anzuzeigen, wenn irgend eine Zahl des Originals so undeutlich ist, dass sie auch anders gelesen werden könnte, was indessen im Ganzen nur selten vorkommt.

Das nächste Geschäft ist nun die Berechnung der Rectascensionen und Declinationen aus den Originalangaben. Als Epoche wurde hierbei der Anfang des Jahres 1855 festgestellt und die Reduction auf dieses Jahr wird für die Mitte der Zone constant angenommen. Bei der geringen Ausdehnung der Zonen ist diese Reduction für Anfang und Ende und die äussersten Grenzen derselben in Declination so wenig, selbst für die von der Epoche entferntesten Theile der Arbeit, verschieden, dass der Beobachtungsfehler durch die Annahme einer constanten Reduction nur durchaus unbedeutend vergrössert wird. Dieselbe könnte aus den Angaben der Kreise und aus dem bekannten Uhrstande berechnet werden, wir haben es aber bequemer und genauer gefunden, diese Angaben nur zur Erkennung einer Anzahl, gewöhnlich 16 bis 20, in den Catalogen vorkommender Sterne zu benutzen, und aus diesen dann die Reduction der beobachteten Zeiten auf mittlere Rectascensionen für 1855, sowie die Declination des Mittelstrichs für dieselbe Epoche zu suchen. Diese Constanten zu den Beobachtungszeiten, resp. den in Bogentheile verwandelten Declinationsunterschieden vom Mittelstriche, addirt geben also die mittlere Rectascension und Declination für 1855, sie werden auf Zehntelzeitsecunden, resp. Zehntelbogenminuten berechnet und in die 4te und 5te Columne der Originalhefte geschrieben. Alle diese Reductionen werden durch Differenzen gemacht und dadurch die Sicherheit der Rechnung sehr vermehrt. Zuweilen ist es, besonders im Anfange, ehe noch die parallactische Aufstellung vorhanden war, vorgekommen, dass der Stundenstrich nicht vollkommen mit dem Declinationskreise zusammenfiel; war die Neigung so bedeutend, dass der daraus entstehende Fehler in den Rectascensionen der äussersten Sterne eine halbe Zeitsecunde überstieg, so wurde jedem Sterne eine Correction wegen der Neigung hinzugefügt, kleinere Correctionen wurden vernachlässigt.

Die Originalhefte dienen nun als Grundlage aller weiteren Untersuchungen. Jede Gegend des Himmels wird wenigstens zweimal durchmustert und zwar so, dass die Mitte der Zone einmal auf einen geraden, das nächste Mal auf einen ungeraden Declinationsgrad gestellt wird. Es ist dabei Gesetz, nur bei guter und dunstfreier Luft zu beobachten; indess darf man in unserm Klima diese Forderung nicht gar zu weit ausdehnen; auch verschlechtert sich der Zustand der Luft zuweilen während der Beobachtung, ohne dass es bemerkt, oder die Verschlechterung für so bedeutend gehalten wird, dass man die Zone vor der bestimmten Zeit schliessen müsste; zuweilen ist diese Verschlechterung auch nur temporär. Die Vergleichung mit der andern Zone giebt dann aber zu erkennen, ob die erstere brauchbar ist, oder ob in ihr so viele der schwächeren Sterne der zweiten fehlen, dass sie noch einmal beobachtet werden muss. Diese dritte Beobachtung derselben Gegend geschieht nur in seltenen Fällen an dem eigentlichen Durchmusterungsapparate, nämlich nur dann, wenn die eine Zone sehr schlecht ausgefallen ist. Sonst werden hierzu stärkere Fernröhre und die mondscheinhellen Nächte benutzt, und die auf solche Weise erhaltenen Zonen Revisionszonen genannt. Die Beobachtungsart derselben ist übrigens ganz der andern

gleich; der einzige Unterschied ist, dass die Revisionszonen nur einen Grad breit sind, und wegen der stärkeren Vergrösserung grössere Genauigkeit gewähren; solche Revisionszonen werden auch beobachtet, wenn in einzelnen Gegenden die beiden eigentlichen Zonen in Beziehung auf die Positionen bedeutende Unterschiede zeigen und dadurch zu erkennen geben, dass in der einen oder andern häufig Fehler begangen worden sind. Regelmässig wird die ganze Region in der Nähe der Milchstrasse auf diese Weise zum drittenmale durchmustert, und überhaupt alle Gegenden des Himmels, in denen die Hauptzonen über 900 bis 1000 Sterne in der Stunde ergeben haben. In so reichen Gegenden ist die Gefahr, hellere Sterne, selbst zweimal, auszulassen, zu gross, und ausserdem leidet auch die Genauigkeit der Positionen durch die Schnelligkeit der Beobachtung zu wesentlich; denn es sind in solchen Fällen zuweilen bis 30 Sterne in der Minute vorgekommen.

Nachdem auf die beschriebene Art alles Material gesammelt, und die Positionen der Sterne für 1855 in den einzelnen Zonen berechnet sind, wird an die Zusammenstellung und Ordnung desselben in Specialcataloge gegangen. Jedem Raume des Himmels von einem Grade Breite in Declination und einer Stunde Ausdehnung in Rectascension ist ein eigenes kleines Heft gewidmet. Die erste, Titelseite, giebt den Grad der Declination und die Stunde der Rectascension welche das Heft umfasst, sowie die Zonen, in denen die betreffenden Sterne vorkommen, mit Angabe der Nummer und Pagina des Heftes, sowohl die Haupt- als etwaigen Revisionszonen. Im Innern, das der bessern Uebersicht wegen Querlinien hat, enthält die linke Seite je 4, die rechte je 3 Columnen für Grösse, Rectascension und Declination, der übrige Raum jeder Seite ist für Bemerkungen aufbehalten. In die ersten Columnen der linken Seite werden die in diesen Catalog gehörenden Sterne einer der Zonen, der Grundzone, nach den Rectascensionen geordnet, in ununterbrochener Folge eingetragen und die Nummer der Zone über die Columne gesetzt. Die zweiten Columnen der linken Seite sind auf gleiche Weise denjenigen Sternen gewidmet, die schon in der ersten vorkommen, während solche, die in jener fehlen, in die ersten Columnen der rechten Seite eingetragen werden. Selten nur fangen die Zonen genau mit einer vollen Stunde an, oder enden mit einer solchen, so dass gewöhnlich irgendwo in der Mitte der Stunde zwei Zonen derselben Declination zusammenstossen. Da diese nun immer in Rectascension etwas übergreifen, so werden die Zahlen aus der folgenden Zone unter die der ersten zwischen die Linien gesetzt, und die Nummer der Zone wird unter die Columne geschrieben. Da aber, wie oben erwähnt, die Zonen immer etwas breiter als 2° beobachtet werden, so kommen in jeder auch eine Anzahl von Sternen vor, die die Gränze der zwei Grade, denen sie eigentlich gewidmet sind, überschreiten. Die in solchen Gränzzonen vorkommenden Sterne werden in die 3ten Columnen der linken oder zweiten der rechten eingetragen, je nachdem sie mit Sternen der Grundzonen identisch sind, oder nicht, und zwar die Sterne aus beiden Gränzzonen in dieselben Columnen, da ja niemals ein Zweifel obwalten kann, in welcher von beiden Zonen sie zu finden sind. Die 4ten Columnen der linken und 3ten der rechten endlich sind für die Wiederholungszonen aufbehalten, mögen dies Revisions- oder mit dem gewöhnlichen Apparate beobachtete Zonen sein. In den wenigen Fällen, in denen mehr als drei Hauptzonen beobachtet sind, haben wir uns damit geholfen, dass wir die aus den zusätzlichen Zonen entnommenen Sterne unterstrichen oder mit farbiger Tinte geschrieben, und sie in die Columnen für die Gränzzonen eingetragen, wenn aber der Stern auch in einer von diesen vorkam, sie unter die Linien geschrieben haben. Die Revisionszonen sind immer mit blauer Tinte eingetragen, um die aus ihnen entnommenen Positionen, da sie eine grössere Genauigkeit gewähren, als die andern, sogleich unterscheiden zu können. Auf diese Weise ist erreicht worden, dass bei möglichster Raumersparniss alle Beobachtungen derselben Sterne unmittelbar nebeneinander stehen, und doch ohne Schwierigkeit zu erkennen ist, in welcher Zone jede Beobachtung zu suchen ist.

Wenn nun alle unsere Beobachtungen in einem Specialcataloge eingetragen sind, werden alle Hülfsmittel die die vorhandenen Cataloge und Himmelscharten darbieten, benutzt, um ihre Genauigkeit zu prüfen. Zuerst werden die Bessel'schen Zonen verglichen und die Positionen bis auf 0ˢ1 und 0′1 genau auf 1855 reducirt, nebst den Grössen in den Raum für die Bemerkungen neben unseren Positionen derselben Sterne eingetragen*). Ebenso geschieht es mit den Catalogen von Lalande, Piazzi Struve in den pos. mediae, und Rümker. Jedoch werden aus diesen Catalogen, wenn die Sterne schon bei Bessel vorkommen, die Grössen allein beigesetzt, die Positionen nur mit solcher Genauigkeit ermittelt, dass Unterschiede von Bessel, die nicht Beobachtungsfehlern allein zuzuschreiben sind, entdeckt werden. Ausserdem werden die erschienenen 4 Bände des Markree Catalogue **) und die Bond'schen Aequatorealzonen ***) nachgesehen, und die daraus für 1855 berechneten Positionen nebst den Grössen mit rother Tinte neben unsre Positionen geschrieben. Endlich werden die Berliner, sowie für die Ecliptical-Gegenden die Hind'schen Charten †) verglichen, und die Grössen der in ihnen enthaltenen Sterne den unsrigen beigeschrieben. Andere Verzeichnisse werden nur sehr ausnahmsweise um irgend einen Zweifel zu lösen, zu Rathe gezogen, da solche fast nie Sterne enthalten, die nicht schon in einem der regelmässig verglichenen Verzeichnisse vorkämen.

Hiermit ist nun aber die Arbeit noch keineswegs beendigt. Es finden sich, wie Jeder, der ähnliche Beobachtungen selbst angestellt hat, nicht anders erwarten wird, in jedem Specialcataloge mehr oder weniger Sterne, die noch einer weiteren Untersuchung bedürfen, indem entweder ihre Existenz selbst nicht sicher begründet ist oder Zweifel wegen der wahren Grösse oder Position derselben obwalten. In vielen Fällen werden solche Zweifel schon durch die Vergleichung mit den oben genannten Catalogen oder Charten gehoben. Diejenigen aber, bei denen keine Entscheidung herbeigeführt werden kann, werden, gewöhnlich schon während des Eintragens, sorgfältig angemerkt, und nachher in besonderen Büchern für die nachzusehenden Sterne zusammengestellt. Es ist hierbei Regel, in diesen Büchern nicht nur die nachzusehenden Sterne selbst zu notiren, sondern auch anzugeben, was sich für Sterne in ihrer Nähe (bis auf 6—7′ Abstand) befinden, theils um Verwechselungen zu vermeiden, theils um, da sich die Gelegenheit darbietet, auch dieser nahe gelegenen Sterne Positionen und Grössen durch nochmalige Schätzung sicherer festzustellen, und sich zugleich die Ueberzeugung zu verschaffen, dass keine anderen helleren Sterne in der Gegend vorhanden sind.

Die meisten Zweifel entstehen aus der Ungewisshcit, ob zwei in verschiedenen Zonen vorkommende nahe gleiche Positionen einem und demselben Sterne zugehören oder nicht. Gewöhnlich stimmen die Rectascensionen innerhalb 2ˢ bis 3ˢ, die Declinationen innerhalb 1′ bis 2′ überein und es wird dann als unzweifelhaft angesehen, dass sie sich auf denselben Stern beziehen; aber auch noch etwas grössere Abweichungen, bis 4ˢ und 5ˢ in Rectascension, und bis 3′ in Declination, lassen uns die Existenz und die Identität des Sterns nicht zweifelhaft erscheinen, zumal wenn Unterschiede in demselben Sinne sich bei mehreren auf einander folgenden Sternen finden. Die Möglichkeit, dass ein solcher Unterschied daraus entstanden sein kann, dass von zwei nahen Sternen einmal nur der eine, das andere Mal nur

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*) Es darf wohl kaum erwähnt werden, dass seitdem unsere Durchmusterung über 45° hinausreicht, meine nördlichen Zonen an die Stelle der Bessel'schen traten und dann auch Groombridge, Johnson und für die sehr nördlichen Gegenden Schwerd und Carrington verglichen wurden.

**) Catalogue of stars near de Ecliptic, observed at Markree during the years 1848—1856 and whose places are supposed to be hitherto unpublished. Vol. I—IV. Dublin 1851—56 8°.

***) Annals of the astronomical observatory of Harvard-College. Vol. I. part. II. Cambridge 1855. 4°.

†) Mr. Bishops ecliptical Charts.

der andere beobachtet worden ist, lässt sich allerdings nicht läugnen, indess ist die Wahrscheinlichkeit sehr klein, und überhaupt wohl nur vorhanden, wenn die Himmelsgegend entweder sehr sternreich, oder die beiden Sterne sehr schwach sind. Im ersten Falle entscheidet die Revisionszone, im zweiten würde es sich um einen Stern schwach 9. 10^{m} Grösse mehr, oder um seine etwas genauere Position handeln. Die Vollständigkeit in Beziehung auf solche Sterne kann aber doch nicht erreicht werden, und wird, wie oben bemerkt, auch nicht angestrebt. Ist der Unterschied zwischen den Positionen der beiden Zonen aber noch grösser, in Rectascension zwischen 6^{s} und 10^{s},*), in Decl. über 3½′, so wird der Stern untersucht; es ist dann immer noch sehr wahrscheinlich, dass die beiden Beobachtungen demselben Sterne angehören und nur eine derselben oder auch beide schlecht oder wirklich fehlerhaft sind. Besonders oft kommen Unterschiede in Declination von nahe 7′ respective 10′ vor, die aus der Verwechselung eines Declinationsstriches mit dem folgenden entstanden sind. Nicht selten kommen auch solche von nahe 21′ respective 30′ vor, während Rectascension und Grösse stimmen, entstanden aus der Verwechselung der längeren, 3 Intervalle von einander entfernten, Declinationsstriche. Auch diese Sterne werden untersucht. Fehler von 2 Strichen sind sehr selten; sie werden nur dann untersucht, wenn die Vermuthung eines solchen Fehlers bei hellern Sternen vorhanden ist. Sehr aufmerksam sind wir darauf, nicht etwa 2 nahe Sterne auf die Charte zu setzen, wo der Himmel nur einen hat. Es finden sich wohl Fälle, wo in Gegenden, die dreimal durchbeobachtet sind, z. B. an den Gränzen, die eine Zone zwei Sterne hat, während in den beiden übrigen nur einer, aber in jeder ein anderer vorkommt. Solche Sterne werden jedesmal nachgesehen. Oft zeigt dann allerdings die Revision zwei Sterne an dieser Stelle, aber etwa eben so oft auch nur einen, indem in der ersten Zone eine doppelte Beobachtung **) unbemerkt stattgefunden, oder sonst ein Fehler vorgefallen war.

In den früheren Zonen sind zuweilen alle Sterne, oder auch nur die helleren, constant zu hell oder zu schwach geschätzt worden. Später kommt dies nur in seltenen Fällen vor, und es sind daher auch Abweichungen in den Grössen von einer Einheit oder mehr sehr selten. Kann dann nicht auf anderm Wege eine Entscheidung herbeigeführt werden, so werden auch solche Sterne untersucht, und zwar mehrmals, wenn mehrere bedeutend abweichende Beobachtungen, sei es bei uns, sei es anderswo, vorhanden sind, so dass der Verdacht der Veränderlichkeit einigermassen begründet ist.

Sonst werden alle Sterne, die doppelt beobachtet sind, als vollkommen constatirt betrachtet. Aber auch die Existenz der nur einmal beobachteten wird als sicher angesehen, wenn sie ausser bei uns noch in einem der verglichenen Cataloge vorkommen oder ihre Identität mit einem Sterne der Charten unzweifelhaft ist. Sterne von Lalande oder Bessel, die bei uns fehlen, lassen sich fast immer durch Annahme eines oder des andern der bei den genannten Autoren so häufig vorkommenden Fehler ***) auf einen unserer Sterne von gleicher Grösse zurückführen und werden dann ohne Weiteres corrigirt. Nur solche Bessel'sche Sterne, bei denen unsere Beobachtungen einen Fehler von 5^{s} wahrscheinlich machen, aber nicht sicher entscheiden, oder bei denen es zweifelhaft bleibt, ob die Bessel'sche Rectascension um 10^{s} oder ein Fadenintervall zu corrigiren sei, werden am Meridiankreise

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*) Für die nördlichen Gegenden des Himmels sind diese Grünzen in Rectascension natürlich weiter gesteckt worden.

**) Vergl. oben p. VII.

***) Ich benutze diese Gelegenheit auf eine Art von Fehlern in den Zenithdistanzen bei Lalande aufmerksam zu machen, die mich erst unsere Durchmusterung kennen gelehrt hat, nämlich eine Verwechselung in den Einern der Minuten von 1 mit 9 oder auch einer ganzen Zehnzahl von Minuten, besonders 20 und 30 mit 1. Die Beobachtungen wurden nach Geogr. Ephem. Bd. I. p. 347 so angestellt, dass einer der beiden Mitarbeiter beobachtete, der andere aufschrieb; es ist dies also offenbar ein Verhören der Zahl gewesen.

näher untersucht, sowie auch solche Sterne, bei denen das Mittel aus unsern Declinationen zwischen 2 bis 3 Minuten von der Bessel'schen abweicht, und die einzelnen Beobachtungen dabei so schlecht zusammenstimmen, dass nicht entschieden werden kann, ob der Unterschied von einem Fehler von einem Theilstriche bei Bessel herrührt, oder unsere Declinationen durch ein unglückliches Zusammentreffen von Umständen so sehr fehlerhaft geworden sind. Der letztere Fall ist aber bis jetzt nur ein paar Male vorgekommen. Meistentheils lassen sich auch Fehler von einem Theilstriche bei Bessel, zumal wenn wir drei oder mehr Beobachtungen haben, mit Sicherheit erkennen, Fehler bei Lalande von 5′ immer. Die wenigen Sterne der genannten Cataloge, für die sich keine plausible Conjectur finden lässt, um sie unter Annahme eines Fehlers mit Sternen unserer Durchmusterung in Uebereinstimmung zu bringen, werden am Meridiankreise aufgesucht, und nicht allein an ihrer Stelle, sondern wenn sie da nicht gefunden werden, auch noch an andern Gegenden des Himmels, an denen sie unter Annahme von zweien Fehlern etwa stehen könnten.

Im Markree-Catalogue und den Bond'schen Aequatorealzonen kommen, da dieselben sich bis auf bedeutend schwächere Sterne ausdehnen, als wir zu beobachten beabsichtigen, und bei unserm Fernrohre zu sehn im Stande sind, natürlich eine Menge solcher vor, die uns fehlen. Da aber die Grössen dieser Cataloge mit den unsrigen gar nicht übereinstimmen, und auch zu verschiedenen Zeiten verschieden geschätzt zu sein scheinen, so ist es oft schwierig zu entscheiden, ob ein in ihnen vorkommender Stern bei uns nur desshalb fehlt, weil er für uns zu schwach ist, oder aber weil er übersehen wurde. Solche fehlende Sterne werden daher nur in dem Falle nachgesehen, wenn die meisten andern von gleicher Grösse bei uns sich beobachtet vorfinden. Die sehr wenigen Hind'schen Sterne 10^m, die uns fehlen, werden ebenfalls regelmässig nachgesehen, da wir dieselben meistentheils hell 9.10^m oder schwach 9^m schätzen und ebenso meistentheils diejenigen 11^m, jedoch nicht immer. Es finden sich nämlich Gegenden auf den Hind'schen Charten, in denen die Sterne dieser Grössenclasse bei uns gewöhnlich nur in einer Zone vorkommen, was anzeigt, dass sie dort zu den schwächern Sternen unserer 9.10^{tem} Grösse gehören, die eigentlich ausser unserm Plane liegen. Bei den Berliner Charten musste eine verschiedene Praxis befolgt werden. Auf mehreren derselben sind die Sterne so genau niedergelegt, dass sie meistens ohne Schwierigkeit identificirt werden konnten. Fehlen uns auf solchen Charten vorkommende Sterne, so werden sie regelmässig nachgesehen*). Andere Charten besitzen nicht dieselbe Genauigkeit, und die auf ihnen befindlichen Sterne sind, zumal wenn sie fern von bekannten Sternen stehen, oft um viele Minuten fehlerhaft. Da ist es denn häufig nicht möglich, dieselben scharf zu identificiren, und bei uns fehlende Sterne solcher Charten werden nur dann nachgesehen, wenn ihre Position entweder durch nahe gelegene Sterne genau ermittelt werden kann, oder wenn sie in Gegenden vorkommen, wo wir gar keine Sterne haben. Jedoch sind diese Fälle sehr selten. Ausser den genannten werden noch die wenigen Sterne hell 9.10^m oder 9^m zur genaueren Untersuchung ausgezogen, welche nur in einer Zone vorkommen, und deren Existenz daher nicht sicher ist, so wie solche nur einmal vorkommende Sterne 9.10^m, die sehr nahe neben hellern stehen, indem unter diesen Verhältnissen leicht auch nicht sehr schwache Sterne übersehen werden können, und es ausserdem ein besonderes Interesse hat, solche Sterne, selbst wenn sie schwächer sind, genau festzustellen. Die Erschei-

*) Eine Ausnahme machte nur die Charte Hora XVIII, die bekanntlich doppelt, von Capocci und Inghirami beobachtet ist. Der schöne italienische Himmel hat diesen Astronomen sehr schwache Sterne gezeigt Sterne, die ich nicht heller als 10^m schätzen möchte. Freilich werden auch unsere Charten manche ebenso schwache Sterne enthalten, aber es schien nicht rathsam, deren Zahl noch zu vermehren, und es wurden daher in dieser Gegend meistens nur diejenigen bei uns fehlenden Sterne nachgesehen, die auf beiden Charten zugleich vorkommen.

nung nämlich, dass neben helleren Sternen in nicht gar zu grossem Abstande schwächere sich finden, kommt selbst in sternärmeren Gegenden so häufig vor, dass sie kaum durch den reinen Zufall erklärt werden kann, im Gegentheile der gegründeten Vermuthung Raum giebt, die Mehrzahl solcher Sterne sei durch ein physisches Band mit einander verbunden. In der That sind denn auch solche Sterne fast regelmässig als wirklich vorhanden, oft sogar ziemlich hell, erkannt worden, wogegen die in anderen Gegenden nur einmal beobachteten Sterne 9ter Grösse meistens entweder zu hell geschätzt angegeben waren, gewöhnlich wohl durch ein Verhören des Aufschreibers, oder gar nicht aufgefunden wurden, und also wahrscheinlich auf irgend einem zusammengesetzten Fehler beruhten.

Alle diese nachzusehenden Sterne werden, soweit es möglich ist, im Meridiankreise aufgesucht, und die Zweifel gelöst. Sie werden immer nur an einem oder zwei Fäden beobachtet und nur ein Microscop abgelesen, wodurch eine Sicherheit erhalten wird, welche, wenigstens für die nicht ganz schwachen Sterne, etwa der der Zonenbeobachtungen von Bessel und Lalande gleichkommt. Für unsern nächsten Zweck ist diese Sicherheit viel zu gross; es würde aber wenig Zeitersparniss sein, wollte man ihre Positionen nur ganz rob ermitteln, und durch die genauere Bestimmung wird sich mit der Zeit ein bedeutender Catalog von vielen tausend Sternen bilden, der nicht ohne Nutzen sein wird. Um diesen Nutzen noch zu vergrössern, werden wenn sich in der Nähe solcher zweifelhafter Sterne hellere in keinem Cataloge vorkommende befinden, diese gewöhnlich genauer bestimmt, jene dagegen nur an einem Faden beobachtet und ihre Declinationsdifferenz mit den genauer bestimmten geschätzt. Alle so bestimmten Sterne werden vorläufig mit einer Genauigkeit von etwa 0ˢ.1 in Rectascension und 0″.1 in Declination auf 1855 reducirt, diese Positionen mit grüner Tinte in die Specialcataloge eingetragen, und danach die etwaigen Fehler in denselben corrigirt, oder wenn der Himmel wirklich zwei Sterne zeigte, die für identisch gehalten worden waren, die zweite Beobachtung auf der linken Seite ausgestrichen und auf der rechten Seite in die betreffenden Columnen eingetragen. Zuweilen kann aber, was besonders bei den ersten Charten, die wir rasch zu vollenden wünschten, der Fall war, diese Revision am Meridiankreise nicht vollständig durchgeführt werden, weil die betreffenden Himmelsgegenden in den Tag rückten. Dann wird der Rest ausser dem Meridian am Heliometer nachgesehen, das zu diesem Zwecke mit einem Fadennetze von dicken Metallfäden versehen ist, die selbst bei schwacher Dämmerung oder geringem Mondscheine noch sichtbar sind. Es werden aber hierzu, wenn die Zeit nicht sehr drängt, nur die mondscheinhellen Abende oder die Zeiten der endenden Dämmerung benutzt. Solche Positionen sind natürlich nicht so genau wie die am Meridiankreise erhaltenen, aber für unsern Zweck noch übergenau. Sie werden mit blauer Tinte in die Specialcataloge eingetragen.

Nachdem durch die eine oder andere der erwähnten Beobachtungsarten alle Zweifel gelöst sind, wird der Hauptcatalog angefertigt, in welchem im Mittel aus den verschiedenen Angaben die Grössen, Rectascensionen und Declinationen auf Zehntheile, resp. der Grössenclasse, Zeitsecunde und Bogenminute angesetzt werden. Für die Grössen erhalten dabei alle Beobachtungen gleiche Berechtigung, wenn nicht etwa durch die Vergleichung mit Bessel und Lalande es sich herausstellt, dass in einer Zone alle Grössen constant zu hell oder zu schwach geschätzt worden sind, in welchem Falle eine solche Zone eine constante Correction erhält. Es ist dies aber meistens nur in den frühesten Zonen eingetroffen. Bei Ermittelung der Positionen wird den Revisionszonen im Verhältnisse ihrer grösseren Genauigkeit auch ein grösserer Werth gegeben, und bei Sternen, die im Meridiankreise beobachtet sind, die Position, die dieser ergeben hat, allein angesetzt. Dieser Hauptcatalog bildet die eigentliche Grundlage der Charten; er ist es, dessen erste Section, nach einen Grad breiten Zonen der Declination, und in dieser nach der Rectascension geordnet, der vorliegende Band enthält.

Die Arbeit ist im Frühjahre 1852 durch Herrn F. Thormann und mich begonnen wor-

den*); indess ist sie im ersten Jahre wenig vorgeschritten, theils weil die passendsten Methoden erst durch die Erfahrung aufgefunden werden und die Beobachter erst die gehörige Uebung erhalten mussten, theils weil es damals noch im Plane lag bis zum Wendekreise des Steinbocks zu gehen, und daher eine Menge von südlichen Zonen beobachtet wurden, die für den neuen definitiven Plan ohne Werth sind. Auch fand sich bald, dass mein Auge mit dem jüngern und schärfern meines Mitarbeiters nicht wetteifern konnte. In sternreichen Gegenden konnte ich, ohne eine Pause zu machen, nicht eine Stunde lang mit gleicher Sicherheit beobachten, und ausserdem entgingen mir beim Herumsuchen auch eine Menge schwächerer Sterne, die freilich ausser dem eigentlichen Plane des Werkes lagen, deren Nichtbeobachtung von meiner Seite aber, während mein Mitarbeiter sie mitnahm, zu grosse Ungleichförmigkeit in die Arbeit gebracht haben würde. Mit dem Frühjahre 1853 trat daher statt meiner Herr Professor Schoenfeld ein, und im Spätsommer desselben Jahres Herr Dr. Krüger statt des Herrn Thormann, dessen Gesundheit durch die anstrengenden Beobachtungen so sehr litt, dass er sich zu seinem und meinem grossen Bedauern gezwungen sah, die Sternwarte und die Astronomie überhaupt zu verlassen. Seitdem haben also die Herren Schoenfeld und Krüger sämmtliche Beobachtungen am Cometensucher, sowie die Revisionszonen besorgt, während ich mich auf die Lösung der Zweifel am Meridiankreise beschränke, die aber allerdings auch fast meine ganze Thätigkeit während der uns hier sehr spärlich zugemessenen klaren Nächte in Anspruch nimmt, sowie die Berechnung der mittleren Positionen aus den rohen Beobachtungen nicht unbedeutende Zeit erfordert. Das Aufschreiben haben meistentheils Studirende unserer Universität besorgt, von denen ich hier nur Herrn Dr. Th. Meyer nenne, der uns über drei Jahre seine Hülfsleistung gewährt, und auch die Berechnung der Rectascensionen und Declinationen übernommen hat, nachdem jeder Beobachter die Nullpunkte für seine Zonen ermittelt hatte. Seit dem Abgange des Herrn Meyer hat uns Herr G. Lehmann die gleichen Dienste geleistet. In die Anfertigung der Specialcataloge theile ich mich mit den Herren Schoenfeld und Krüger, jedoch so, dass nur selten solche vorkamen, an denen ich nicht einen Theil der Arbeit durchgeführt hatte, um immer mit dem Ganzen vertraut zu bleiben und die nöthige Einheit daraus nicht schwinden zu lassen. Den Hauptcatalog fertigte zum grössten Theile Herr Professor Schoenfeld an.

Ich bin in der Darlegung der Beobachtungs- und Berechnungsmethoden wie der angewandten Controllen so ausführlich gewesen, um den Astronomen den Grad der Sicherheit anschaulich zu machen, den sie von unserer Durchmusterung erwarten können. Es wird aber nicht unpassend sein, denselben nach dem Erfolge näher zu bezeichnen.

Wie oben erwähnt, ist der eigentliche Zweck unserer Arbeit die Ermittelung aller Sterne bis zur 9ten Grösse hinab. Absolute Vollständigkeit in dieser Hinsicht wird Niemand erwarten, der sich je mit ähnlichen Arbeiten beschäftigt hat, aber eine einer solchen sich sehr nähernde darf gefordert werden, und ich glaube sie auch erreicht zu haben. Die Arbeit selbst bietet mehrere Mittel dar, den Grad dieser Annäherung zu erkennen. Das erste besteht in der Untersuchung, ob alle früher beobachtete und als sicher vorhanden constatirte Sterne bis zu der geforderten Grösse hinab auch bei uns vorkommen.

Die Grundlage dieser Untersuchung bildet zunächst die, wie oben erwähnt, durchweg vorgenom-

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*) Herr J. Schmidt wurde durch Kränklichkeit verhindert, an den Beobachtungen Theil zu nehmen; jedoch hat er demungeachtet einen bedeutenden Antheil an dem Unternehmen, indem die Beobachtungen, welche er für die von ihm bearbeitete Berliner Charte Hora V auf ganz ähnliche Weise in grosser Vollständigkeit hier angestellt hat, von uns, so weit sie in die Gränzen unserer Charten fallen, benutzt worden, und desshalb diese Gegenden in der Regel nur noch einmal durchmustert sind.

mene Vergleichung mit den Zonenbeobachtungen von Lalande und Bessel, und es beruhen die folgenden Resultate auf der Vergleichung von etwa 26000 Sternen aus diesen beiden Catalogen, die in unsern Zonen aufgesucht wurden. Unter diesen fand sich eine grosse Zahl, so wie sie in den Catalogen verzeichnet standen, nicht vor, aber in den allermeisten Fällen lag der Fehler so nahe, dass wir keinen Anstand nahmen, ihn gleich zu corrigiren. Wo aber die Annahme eines gewöhnlichen einfachen Fehlers nicht ausreichte, um Uebereinstimmung mit unserer Durchmusterung hervorzubringen, wurden die Sterne im Meridiankreise eingestellt. Es waren dies meistentheils solche, die so nahe bei hellern standen, dass ihr Uebersehen bei der Durchmusteruug dadurch sich erklären liess, und sie wurden dann auch meistentheils richtig an ihrer Stelle gefunden *). Ein Uebersehen solcher Sterne kann unserer Arbeit nicht zur Last gelegt werden; sie kann eben nur geben, was man bei 10maliger Vergrösserung sehen kann. Zwar ist das Fernrohr ausgezeichnet und hat selbst Struve'sche Doppelsterne getrennt gezeigt, so ψ' Piscium, dessen beide Componenten 5^m nur $30''$ von einander abstehen, und sogar 61 Ophiuchi und 61 Cygni, deren ersterer durch 2 nicht voll $21''$ von einander abstehende Sterne 6^m, der zweite durch 2 gar nur $17''$ bis $18''$ entfernte 5.6^m gebildet wird. Aber in diesen, wie in ähnlichen Fällen sind beide Sterne gleich hell. Wenn der eine bedeutend schwächer als der andere ist, zumal wenn jener vorausgeht, ist er selten gesehen worden, wenn der Abstand unter einer Minute beträgt, und noch mehr, je bedeutender der Helligkeitsunterschied ist. So ist W. XIX^u Nro. 1114, 9^m und 6',5 von α Aquilae entfernt, nur einmal gesehen worden; 2 andere Male hat er, obgleich eigens nach ihm gesucht wurde, wegen des Glanzes von Atair nicht erblickt werden können. Ausser solchen helleren Sternen sehr nahen, fehlen uns nur noch 23 andere. Von diesen sind 7 mehrere Male vergebens am Himmel gesucht worden; bei 6 derselben ist sehr wahrscheinlich irgend ein Versehen vorgefallen, das ich aber nicht aufzuklären im Stande bin **); aber der siebente, nämlich Bessel Zone 180 9^m 9^u 51' 59".82 +16° 45' 12".5, hat zur Zeit seiner Beobachtung wirklich an seiner Stelle gestanden, und Herr Powalky hat nachgewiesen, dass es der Planet Amphitrite gewesen ist. Bei einem achten Sterne, den ich früher ***) auch für fehlend ansah, hat eine schärfere Kritik der betreffenden Stelle in Bessels Zone 163 einen sehr wahrscheinlichen Fehler entdecken lassen, nach dessen Berichtigung sich der Stern wirklich am Himmel vorfindet. Es kommen nämlich in der genannten Zone folgende zwei Beobachtungen vor:

8.9^m	Fad.	2	und	5.	15^u	22'	0".39	+5° 53' 30".5
9	„	5				22	43.47	+5 34 9.3

Die zweite ist die des fehlenden; allein der Umstand, dass der vorhergehende Stern an Faden 2

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*) Ein einziger W. XIX. 170 = B. Z. 180. 9^m 19^u 6' 8"60+5°46'7".4 ist nicht am Himmel; nimmt man aber einen doppelten Fehler an, indem man statt des dritten Fadens den zweiten und den Theilstrich 44 statt 45 liest, so findet man genau die Position eines dreimal in der Durchmusterung vorkommenden und am 15ten Septbr. 1856 am Meridiankreise bestimmten Sterns 9^m, der sonst bei Bessel fehlen würde.

**) Es sind dies die Sterne

B, Z. 285 — 10^u 54' 35".39 +17° 12' 19".4 und
54 33.34 +16 48 12.4
H. C. p. 50. 8^m 6^u 33' 27" 48° 50' 0"
81 — 16 32 24 32 7 48
8 34 55 31 53 36

und

Rümker Nro. 3193 — 10 18 0.13 +20 3 15.4 zweimal beobachtet.

***) Anzeige pag. 25, Note ***).

und 5 beobachtet ist, leitet schon auf die Vermuthung, dass Bessel nach der Beobachtung des 2ten Fadens das Fernrohr verrückt, und erst später, als er wieder auf den Stern zurückgekommen war, den 5ten Faden beobachtet hat. Es ist sonst gar kein Grund vorhanden, warum Bessel, wenn er noch einen Faden beobachten wollte, etwa weil der 2te nicht sicher genug erschien, bis zum 5ten gewartet hätte. Ein solches Zurückkommen fand aber sehr häufig statt, und wenn dann Bessel oder der Gehülfe am Microscope es bemerkten, wurde der Stern entweder gar nicht beobachtet oder doch nur ein Faden, und dieser dann dem frühern hinzugefügt. Nehmen wir aber diese mehr als wahrscheinliche Hypothese an, so musste Bessel, da er mit dem Fernrohre nach Süden ging, sehr bald auf den Stern Nr. 3022 der Zone +5° des Catalogs treffen, der so hell ist, dass er nicht leicht übersehen werden konnte, und dessen genauere Position für 1855 nach einer hiesigen Meridianbeobachtung 15ᵃ 22′ 49″.51+5° 26′ 28″.6 für 1825 aber 15ᵃ 21′ 20″.38+15° 32′ 50″.7 ist. Fast genau dieselbe Position aber, nämlich 15ᵃ 21′ 20″.41 +5° 32′ 50″.2, erhält man, wenn man annimt, dass der fragliche Stern zwischen den beiden Fäden des vorhergehenden beobachtet sei und ausserdem noch den so häufig bei Bessel vorkommenden Fehler von 10″ gestattet, also die Stelle liest 9ᵐ Fad. 5 15ᵃ 21′ 33″.47+5° 34′ 9″.3.

Als wirklich veränderlich erkannt sind 4 dieser Sterne *). Von zwei andern, die in der „Anzeige“ als wahrscheinlich veränderlich angeführt worden sind **), ist dies mittlerweile sehr unwahrscheinlich geworden: Der eine W. VIIᵘ. 503 ist so oft und zu verschiedenen Zeiten vergeblich gesucht worden, dass an seiner Nichtexistenz kaum geweifelt werden kann, zumal die Beobachtung auf der er beruht, Bessel Z. 208 9.10ᵐ 7ᵘ15′ 32″.10 — 0° 8′ 43″.0 unter Annahme des sehr gewöhnlichen Fehlers von 5 Theilstrichen, indem man diese 57 statt 52 und demgemäss die Declination — 0° 23′ 43″.0 liest, genau auf einen wirklich existirenden Stern Zone —0° Nr. 1703 des Catalogs führt, wie eine Meridianbeobachtung 1859 Mai 20 gelehrt hat. Ebenso oft ist der andere Stern W. XIVᵘ. 113 in gleicher Grösse als schwach 9.10 an seiner richtigen Stelle gesehen worden, und nur seiner geringen Helligkeit und seiner Nähe an dem hellen Sterne 15 Bootis 5.6ᵐ ist es zuzuschreiben, dass er zweimal bei Bessel, und in allen unsern 4 Zonen fehlt, in denen diese Gegend durchmustert wurde.

Auch noch 4 der übrigen 11 Sterne sind nur 9.10 Grösse und diese stehen ausserdem nicht sehr weit von helleren ab, nämlich der eine 3′.7, der andere 2′.1 von einem Sterne 7ᵐ, der dritte 5′ von einem Sterne 6.7ᵐ, der vierte 3½′ von einem Sterne 8ᵐ und es ist ausserdem noch ein heller Stern 9ᵐ in der Nähe. Es bleiben also unter 26000 nur 7 Sterne übrig, von denen man bis jetzt annehmen muss, dass sie wirklich ohne Grund bei der Durchmusterung übersehen sind; ich sage bis jetzt: denn es ist wohl nicht unwahrscheinlich, dass auch von diesen noch der eine oder der andere veränderlich ist. Dagegen ist aber auch nicht zu übersehen, dass uns für den bis jetzt untersuchten Theil des Himmels eine Menge Hülfsmittel zur Controlle geboten waren, die für die nördlichen Gegenden fehlen werden. Durch diese Hülfsmittel sind nicht wenig von uns nur einmal als 9.10ᵐ beobachtete Sterne als wirklich an ihrer Stelle vorhanden constatirt worden und also auf die Charten gekommen, während sie ohne jene Hülfsmittel fortgelassen worden wären. Unter diesen wird auch wohl einer oder der andere Stern 9ᵐ sein, und ein solcher wird also, wo uns jene Hülfsmittel fehlen, auch nicht auf den Charten

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*) Ihre Positionen für 1855 sind:

R Canis minoris	7ᵃ	0′	44″.0	+10° 15′.0
R Comae	11	56	49.0	+19 35.1
U Virginis	12	43	44.3	+ 6 20.6
S Herculis	16	45	17.7	+15 11.3

**) Pag. 26, Note **).

zu finden sein. Gleiche ich diese Wahrscheinlichkeiten gegen einander aus, und berücksichtige auch nicht, dass von den 7 Sternen einer von mir nur als schwach 9m, von Bessel als 9.10m beobachtet ist, so fehlen uns unter 26000 Sternen 7, und es werden also nach der Wahrscheinlichkeit von den 110000 bis 120000 Sternen 9m, welche der Himmel in den Gränzen unserer Charten enthalten mag, nur etwa 30 in unserer Arbeit nicht vorkommen. Zu nahe derselben Zahl gelangt man auf einem andern Wege. Von jenen 26000 Sternen nämlich kommen ungefähr 400 nur in einer Zone vor, oder einer unter 65; nach der Wahrscheinlichkeit muss also unter 4215 Sternen einer in beiden Zonen fehlen, also nahe dasselbe Verhältniss wie früher. Auch unter den nur einmal beobachteten Sternen 9m haben sich bei der Untersuchung nur sehr wenige gefunden, die wirklich diese Grösse hatten, die bei weitem grössere Mehrzahl war entweder nur 9.10m oder die Beobachtung war fehlerhaft. Ueberhaupt kommen aber solche nur einmal beobachtete Sterne 9m in den spätern Zonen sehr selten vor. Ein drittes Criterium für die Vollständigkeit unserer Charten in Beziehung auf die Sterne 9m geben die Untersuchungen der verschiedenen Zweifel am Meridiankreise oder Heliometer; nach einem ungefähren Ueberschlage werden bei dieser Gelegenheit etwa 600 Quadratgrade von Neuem untersucht worden sein. Es ist dies freilich nur $^1/_{35}$ des ganzen Gebietes unserer Arbeit; es ist aber auch noch kein Stern 9m gefunden, der übersehen worden wäre, ausser den eben gesuchten, und einem Sterne, der sich als veränderlich herausgestellt hat, nämlich R Bootis. Bei dieser Gelegenheit, sowie durch die Revisionszonen hat sich zugleich gezeigt, dass auch in Beziehung auf die Sterne der 9.10ten Grösse unsere Charten ziemlich vollständig sein werden; es sind nur wenige gefunden worden, die nicht doppelt beobachtet, noch weniger, die nicht wenigstens einmal in der Durchmusterung vorkamen, und diese gehörten dann meistens zu den schwächern. Was namentlich die Revisionszonen betrifft, so hatte eine Zählung im Mittel aus mehreren ergeben, dass durch sie die Zahl der durch die Cometensucherzonen allein constatirten Sterne um 24%, also nahe $^1/_4$ vermehrt worden ist. Diese Revisionszonen sind aber, wie erwähnt, nur in den sternreichsten Gegenden beobachtet worden, wo also auch die Gefahr, Sterne zu übersehen, die grösste ist, und ich glaube daher, dass im Ganzen uns von den Sternen 9.10ter Grösse kaum mehr als $^1/_{10}$ bis $^1/_8$ fehlen werden. In diese Grössenclasse sind bei uns aber noch fast alle diejenigen Sterne eingeschlossen, die auf den Hind'schen Charten als 11m verzeichnet stehen. Dagegen werden unsere Charten aber allerdings nicht wenige Sterne enthalten, die selbst nach unserer Schätzung nicht zu der 9.10ten Classe gerechnet werden können, es war dies nicht zu vermeiden und wird bei keiner ähnlichen Arbeit vermieden werden können, welche Methode man auch anwendet. Es liegt dies in der Unbestimmtheit der Gränzen für die Grössenclassen, die nicht allein durch atmosphärische Verhältnisse, sondern auch durch mehrere andere Ursachen vermehrt wird. Endlich will ich nicht behaupten, dass unsere Charten, trotz aller angewandten Vorsicht, nicht einen oder den andern Stern enthalten werden, der am Himmel nicht vorkommt, und der nur durch ein Zusammentreffen von Fehlern bei verschiedenen Sternen entstanden ist; ich hoffe aber, dass ihre Zahl noch geringer sein wird als die der übersehenen 9m. Da unsere Papiere in der vollkommensten Ordnung sind, und in der Bibliothek der Sternwarte sorgfältig aufbewahrt werden, so werden sie, wenn ein solcher Fall sich vorfinden sollte, immer die nöthige Auskunft über das Entstehen eines solchen Sterns geben können. Bei der Beurtheilung derartiger Mängel, die sich etwa später herausstellen könnten, ist übrigens ein Umstand nicht zu übersehn, der hier noch einmal besonders hervorgehoben werden mag. Es sind bei den Revisionen hin und wieder Sterne vermisst und deshalb für fehlerhaft gehalten worden, von denen eine erneuerte Untersuchung gezeigt hat, dass sie durch den Totaleindruck, den zwei oder mehrere sehr schwache und nahe bei einander stehende Sterne in dem schwach vergrössernden Ocular des Cometensuchers machten, entstanden sind, und ebenso haben die Revisionszonen und der Himmel zuweilen zwei sehr nahe Sterne

statt eines hellern der Cometensucherzonen. Solche Mängel sind nicht eigentlich der Arbeit oder der Methode zur Last zu legen, sondern sie sind eben in dem Umstande begründet, dass die Vollendung der Arbeit unabsehbar geworden wäre, hätte man die Vergrösserung beträchtlich verstärken, also die Breite der Zonen in eben dem Masse verringern wollen. Uebrigens wird diese Unvollkommenheit in den sternreichen Gegenden, wo die Gefahr, derartige Gruppen als einzelne Sterne zu catalogisiren an und für sich am grössten ist, am seltensten vorkommen, da hier in der That fast immer Revisionszonen beobachtet wurden, bei denen eine stärkere Vergrösserung angewandt ist.

Aus den eben angeführten Ursachen sind auch die Grössenangaben der helleren Sterne Fehlern unterworfen. Um diese bei unserer Arbeit annähernd zu schätzen, habe ich ungefähr 2000 Sterne nach ihren Grössen mit den von andern Beobachtern angegebenen verglichen. Diese Vergleichung ist freilich schon vor längerer Zeit gemacht, als noch kein sehr reiches Material vorlag. Sie wurde eben angestellt, um unsere Schätzungen denen von Bessel möglichst anzupassen, und bei einer spätern Untersuchung, nach Vollendung der ganzen Arbeit, werden sich daher etwas andere Zahlen herausstellen; indess ist eine sehr bedeutende Aenderung nicht zu erwarten. Bezeichnen wir die Grössen der Durchmusterung mit D, die von Bessel mit B, die von Lalande mit L, und drücken sie in Decimalbrüchen aus, so erhalten wir folgende Tableaus, in denen die Zahlen hinter den Grössenangaben die Anzahl der Sterne bedeuten, aus denen jene geschlossen, und unter der Grösse 5.0 alle Sterne von der 5.6^m bis zur 4^m zusammengefasst sind.

D.	B.		L.	
9,5	9,188	69	9,250	4
9,0	8,999	715	8,913	121
8,5	8,750	566	8,575	547
8,0	8,212	290	8,033	495
7,5	7,792	118	7,449	243
7,0	7,356	52	7,031	147
6,5	7,000	39	6,538	79
6,0	6,661	18	6,144	52
5,0	5,722	27	5,067	60

B.	D.		L.	
9,5	9,180	64	8,600	10
9,0	8,820	1077	8,688	577
8,5	8,353	281	8,359	409
8,0	7,955	277	7,919	738
7,5	7,451	61	7,423	143
7,0	6,941	94	6,942	302
6,5	6,143	21	6,344	45
6,0	5,750	18	5,989	44
5,0	4,769	13	4,942	26

L.	D.		B.	
10,0	8,700	5	8,625	4
9,5	8,722	41	8,797	59
9,0	8,526	321	8,743	414
8,5	8,349	314	8,558	403
8,0	8,042	449	8,208	608
7,5	7,684	201	7,815	333
7,0	7,272	189	7,396	250
6,5	6,886	79	7,064	94
6,0	6,423	91	6,687	75
5,0	5,133	60	5,691	55

Vergleicht man die entsprechenden Zahlen in den verschiedenen Tableaus, so zeigt sich trotz der grossen Zahl der verglichenen Sterne sehr geringe Uebereinstimmung. So folgt z. B. aus dem ersten Tableau 9,188 B = 9,5 D, während eine Interpolation in der zweiten, 9,188 B = 8,96 D. giebt, und ähnlich verhält es sich bei anderen Grössen. Eine nähere Betrachtung der influirenden Umstände ergiebt indess leicht den Grund dieser scheinbaren Anomalie. Bei dem angeführten Beispiele müssen wir berücksichtigen, dass Bessel sowohl als wir, keine kleineren Grössen, als die 9.10^m angegeben haben, dass bei Bessel die Zwischenclassen einen geringern Umfang haben als bei uns, so dass, während wir z. B. nur die Sterne von der Grösse 9,25 bis 8,75 als 9^m angeben, Besselś 9^m vielleicht von 9,35 bis 8,65 geht, dass ferner Bessel nur die hellsten Sterne der 9.10^m beobachtet hat, und dass wir im Ganzen etwas heller schätzen als Bessel. Wir können nun annehmen, dass Bessel von den Sternen 9.10^m nur diejenigen noch beobachtet hat, deren Grösse er, wenn er Zehntheile geschätzt hätte, zu 9,4 angegeben haben würde, und dass wir diese 9,25 schätzen. Diese Zahl würde also das zweite Tableau als dem Bessel'schen 9,5 entsprechend angeben müssen, wenn wir noch schwächere Grössen angäben. Da dies aber nicht der Fall ist, und wir gewiss manche dieser Sterne um eine ganze Grösse zu hell geschätzt haben, keinen dagegen soviel zu schwach, so müssen wir eine kleinere Zahl als 9,25 erhalten. Umgekehrt werden wir von den Sternen 9,25 nach unserer Schätzung etwa die Hälfte als 9^m, die andere Hälfte als 9.10^m angegeben und zu der letztern Classe durch Beobachtungsfehler noch eine Menge hellerer Sterne gerechnet haben. Da nun die unserer 9,25 bei Bessel entsprechende Grösse auch bei ihm nahe an der Gränze zwischen 9^m und 9.10^m liegt, so wird er von diesen auch eine grosse Zahl 9^m, manche sogar 8.9^m geschätzt haben, keinen aber 10^m, und so lassen sich also auch die entsprechenden Zahlen des ersten Tableaus erklären, besonders wenn wir berücksichtigen, dass wir in der Nähe hellerer Sterne stehende schwächere, eben wegen jener Nähe meistens zu schwach geschätzt haben, während Bessel unter diesen Umständen oft sehr schwache Sterne als 9^m angegeben hat, weil sie ihm, da ihr Ort durch den hellern Stern genau gegeben war, deutlicher in die Augen fielen. Aehnlich verhält es sich mit den Sternen 9^m, also bei uns denjenigen, die wir zwischen 9,25 und 8,75 schätzen, und die von Bessel etwa zwischen 9,35 und 8,85 geschätzt sein werden. Alle diese Sterne sind also auch bei Bessel 9^m, wie es das erste Tableau angiebt; dagegen gehören zu den Bessel'schen 9^m noch die Sterne die zwischen 8,85 und 8,65 B oder 8,75 und 8,55 bei uns liegen, die wir also 8.9^m genannt haben, und es muss also im zweiten Tableau dem Bessel'schen 9,0 eine kleinere Zahl bei uns entsprechen, wie es auch wirklich der Fall ist.

Unter diesen Umständen werden wir zu einem richtigeren Resultate gelangen, wenn wir die Mittel nehmen, für die Vergleichung der Durchmusterung mit Bessel aus den Angaben des ersten und

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zweiten, für Lalande und die Durchmusterung des ersten und dritten, für Bessel und Lalande des zweiten und dritten Tableaus. Wir erhalten daraus die folgenden neuen Tableaus:

D.	B.	D.	L.	B.	L.
9,34	= 9,34	9,11	= 9,37	9,15	= 9,05
8,91	= 9,00	8,76	= 8,96	8,87	= 8,84
8,43	= 8,63	8,43	= 8,54	8,53	= 8,43
7,98	= 8,11	8,02	= 8,02	8,10	= 7,96
7,48	= 7,65	7,59	= 7,57	7,68	= 7,46
6,97	= 7,18	7,14	= 7,02	7,20	= 6,97
6,32	= 6,76	6,69	= 6,52	6,78	= 6,42
5,88	= 6,33	6,21	= 6,07	6,34	= 5,99
4,88	= 5,36	5,07	= 5,03	5,35	= 4,97

Man sieht aus dieser neuen Zusammenstellung, wenn man von den Zahlen der ersten Reihe abstrahirt, die aus den oben angegebenen Gründen unsicher sind, deutlich, dass wir die Sterne etwas heller schätzen als Bessel, und dass der Unterschied mit der Grösse zunimmt, und zwar dieser sehr nahe proportional, so dass also Bessel's Grössenclassen einen nahe im Verhältniss von 10 zu 9 grössern Umfang haben, als die unsrigen. Aus der Vergleichung mit Lalande hingegen ergiebt sich, dass wir die schwächeren Sterne heller schätzen, als die Angaben der Histoire céleste, die 8^m nahe gleich und die hellern schwächer, so dass also Lalande's Grössenclassen einen noch geringern Umfang haben, als die unsrigen, und zwar im Mittel wieder in dem Verhältnisse von 9 zu 10. Es zeigt sich aber zugleich deutlich, dass die Differenzen sich nicht durch eine grade Linie ausdrücken lassen, d. h. dass bei Lalande und uns die verschiedenen Grössenclassen nicht in gleichem Verhältnisse zu einander stehen, wofür auch der Umstand spricht, dass in der ersten Zusammenstellung im Mittel aus 26 Sternen die Lalande'sche Grösse 5.6^m genau auch der gleichen bei uns entspricht.

Gleicht man die Zahlen der letzten Tableaus aus, so erhält man folgende neue Zusammenstellung, in der ich zur Vergleichung noch meine Grössenschätzungen in den nördlichen Zonen hinzugefügt habe:

D.	B.	L.	B.	D.	NZ.	L.	D.
9	9,10	9,28	9	8,89	8.91	9	8,79
8,5	8,64	8,62	8,5	8,34	8,52	8,5	8,40
8	8,19	8,00	8	7,80	8,04	8	8,00
7,5	7,73	7,42	7,5	7,25	7,25	7,5	7,57
7	7,28	6,86	7	6,70	6,67	7	7,12
6,5	6,83	6,34	6,5	6,15		6,5	6,66
6	6,37	5,89	6	5,60		6	6,12

und diese Zahlen wird man vorläufig anwenden können, um unsere Grössen auf Bessel und Lalande zu reduciren und umgekehrt.

Wie oben erwähnt, haben wir unsere Resultate auch stets mit den Charten von Hind, sowie mit dem Markree-Catalogue verglichen; die Grössenvergleichungen sind aber noch nicht zusammengestellt; ich kann nur so viel sagen, dass die Hind'sche 10^m im Mittel etwa = 9,2 nach unserer

Schätzung sein wird, und dass seine 11^m unserer 9.10^m entspricht, jedoch so, dass unsere Charten und Cataloge noch viele Sterne enthalten, die bei Hind nicht vorkommen, während uns wenige Hind'sche 11^m fehlen, und dies nur in gewissen Gegenden, wo Hind schwächere Sterne mit 11^m bezeichnet zu haben scheint, als sonst. Dagegen habe ich eine Vergleichung einiger Sterne 7^m und 6^m mit Struve nach dessen Durchmusterung des Himmels in Beziehung auf die Sterne 7^m und hellere angestellt, wozu mein verehrter Freund mir aus seinen Manuscripten die nöthigen Daten mitgetheilt hat. Es ergiebt sich hieraus, wenn die Struve'schen Schätzungen mit P bezeichnet werden:

P.	D.	
7,5	7,977	31
7,0	7,723	239
6,5	7,178	46
6,0	6,477	31

Die Zahl der Sterne ist zu gering, um über den Gang der Unterschiede etwas Genaueres bestimmen zu können, man kann nur sagen, dass im Allgemeinen die Differenz für die helleren Sterne kleiner wird, was auch sehr erklärlich ist. Auch kann diese Vergleichung schon deshalb keine sehr grosse Genauigkeit gewähren, weil Struve die Sterne 7.8^m nur beiläufig mitgenommen, auch uns seine Sterne 6^m nicht mitgetheilt hat, weil der eigentliche Zweck der Vergleichung die Sterne 7^m waren. Nimmt man indess aus allen 347 Sternen das Mittel, so ist

$$D - P = +0{,}673$$

d. h. wir beobachten die Pulkovaer Sterne 7^m nahe um $^2/_3$ Grössen schwächer; Struve schätzt also noch heller als Lalande, wohl eine Folge des starken Fernrohres.

Was nun die Sicherheit der Grössenschätzungen betrifft, so stellen sich die wahrscheinlichen Fehler eines Unterschiedes in der Grössenschätzung folgendermassen heraus, wobei zu bemerken, dass die Columnen, die mit B, L, D überschrieben sind, die wahrscheinlichen Fehler geben, welche man erhält, wenn man resp. die Grössen von Bessel, Lalande und der Durchmusterung zu Grunde legt, unter M aber die Mittel aus den zusammengehörigen Zahlen genommen sind, welche ich für die plausibelsten Werthe der wahrscheinlichen Fehler halte; die letzteren gelten für diejenigen Grössen im Sinne der Durchmusterung, welche in der Columne G stehen. Die Zahlen hinter denen in den Columnen B, L, D zeigen die Zahlen der einzelnen Vergleichungen an.

1. Bessel und Durchmusterung.

	B.		D.		M.	G.
9,5	0,211	64	0,181	69	0,196	9,4
9	0,213	1077	0,116	715	0,165	8,95
8,5	0,245	281	0,241	566	0,243	8,42
8	0,274	277	0,297	290	0,285	7,90
7,5	0,376	61	0,362	118	0,369	7,38
7	0,481	94	0,255	52	0,368	6,85
6,5	0,387	21	0,371	39	0,379	6,32
6	0,405	18	0,276	28	0,340	5,80
5	0,328	13	0,422	27	0,375	4,75

2. Lalande und Durchmusterung.

	L.		D.		M.	G.
9,5	0,214	41	0,195	4	0,205	9,3
9	0,223	321	0,268	121	0,245	8,90
8.5	0,242	314	0,332	547	0,287	8,45
8	0,268	449	0,357	495	0,313	8,00
7,5	0,297	201	0,394	243	0,346	7,53
7	0,383	189	0,425	147	0,404	7,06
6,5	0,362	79	0,327	79	0,344	6,58
6	0,334	91	0,329	52	0,332	6,06
5	0,372	60	0,380	60	0,376	5,02

3. Bessel und Lalande.

	B.		L.		M.	G.
9,5	0,310	10	0,235	59	0,272	9,3
9	0,312	577	0,255	414	0,284	8,84
8,5	0,377	409	0,317	403	0,347	8,37
8	0,385	738	0,330	608	0,358	7,90
7,5	0,380	143	0,366	333	0,373	7,39
7	0,438	302	0,379	250	0,408	6,91
6,5	0,424	45	0,325	94	0,374	6,40
6	0,561	44	0,350	75	0,455	5,86
5	0,440	26	0,488	55	0,464	4,77

Aus der Vergleichung dieser Zahlen sieht man zunächst, dass die Fehler einer Grössenschätzung mit der Helligkeit der Sterne zunehmen, und zwar für die schwächeren Sterne ziemlich rasch, von der 7.8^{m} an ganz unmerklich. Es ist dies offenbar eine Folge des Umstandes, dass bei den helleren Sternen die Hülfsmittel den Beobachter verlassen, die ihm bei den schwächeren die Vergleichung ihres Lichts mit der Beleuchtung des Feldes der Meridianfernröhre, in dem Cometensucher der Durchmusterung mit der des Himmelsgrundes gewähren. Dazu kommt noch bei den schwächeren Sternen die Leichtigkeit der Vergleichung mit ihnen nahe gleich hellen und sei es, wie bei der Durchmusterung im Raume, sei es, wie in den Meridianfernröhren in der Zeit naheliegenden, ein Hülfsmittel, welches bei den helleren Sternen ihrer Seltenheit wegen fortfällt.

Es geht aber auch aus der Vergleichung der drei verschiedenen M für dieselben Grössenclassen mit bedeutender Sicherheit hervor, dass die Grössenschätzungen der Durchmusterung sicherer sind als Bessel's und diese meistens wieder sicherer als die Lalande's: die M in der ersten Tabelle sind überall die kleinsten, die in der dritten die grössten. Bezeichnen wir die wahrscheinlichen Fehler der Durchmusterung, von Bessel und Lalande resp. mit D, B, L, so haben wir in den M der ersten Tabelle die Quadratwurzeln aus den Summen der Quadrate von D und B, in der zweiten dieselben für D und L, in der dritten für B und L, und wir können also aus je drei Gleichungen die Unbekannten D, B, L entwickeln. Die auf diesem Wege erzielten Werthe können freilich auf keine grosse Genauigkeit Anspruch machen, einmal weil die Grundwerthe meistens auf zu wenigen Sternen beruhen, dann auch weil die verschiedenen M nicht ganz gleichen Grössen entsprechen; indess werden wir doch eine

erste Annäherung an die Wahrheit erhalten. Führen wir die Rechnungen wirklich aus, so erhalten wir die folgende Tabelle:

	D.	B.	L.
9,5	0,05	0,19	0,20
9	0,06	0,15	0,24
8,5	0,10	0,22	0,27
8	0,16	0,24	0,27
7,5	0,24	0,28	0,25
7	0,26	0,26	0,31
6,5	0,25	0,29	0,24
6	0,10	0,33	0,32
5	0,18	0,33	0,33

Wenn auch die beiden ersten Werthe von D nur zufällig so klein geworden sein mögen, so ist doch für die Sterne bis zur 8ten Grösse die Sicherheit der Grössenschätzungen der Durchmusterung bestimmt bedeutend grösser, als die von Bessel und Lalande, und man sieht hieraus, wie viel sicherer die Grössenschätzung wird, wenn man eine Menge von Sternen zu gleicher Zeit vor sich sieht, als wenn man sie mit früher gesehenen aus der Erinnerung vergleicht. Für die helleren Sterne, für die dieser Vorzug der Durchmusterung fortfällt, verschwindet auch der Unterschied in der Genauigkeit fast ganz. Denn dass die D für die fünfte und sechste Grösse so klein ausfallen, rührt wohl zum Theil vom Zufalle bei der geringen Zahl von Vergleichungen her, zum Theil aber auch daher, dass unter den in diese Classen eingegangenen Sternen nicht wenige sind, deren Grössen den Beobachtern bekannt waren.

Bei einer andern Gelegenheit *) habe ich den wahrscheinlichen Fehler einer Bessel'schen Grössenschätzung 0,191 gefunden; es stimmt diese Zahl auf eine merkwürdige Weise mit dem Mittel der B für die drei schwächsten Grössenclassen überein, zu denen die bei jener Untersuchung benutzten Sterne fast sämtlich gehören, und erweckt dadurch Vertrauen auch für die übrigen Zahlen der letzten Tabelle.

Nicht ganz so günstig hat sich die Sicherheit unserer Arbeit in Beziehung auf die Positionen herausgestellt. Ich habe diese dadurch ermittelt, dass ich die Positionen aller von Lalande, Bessel und Andern sicher bestimmten Sterne in den Stunden 0^u bis 5^u, 7^u, 8^u, 21^u und 22^u der Zonen von -1^0 bis $+2^0$ mit den Positionen unseres Hauptcatalogs verglichen habe. Die Zahl dieser Sterne ist 903 und die Summe der Quadrate der Unterschiede war für Rectascension mit Zugrundelegung der Zeitsecunde als Einheit 974,81, für die Declination und die Einheit einer Bogenminute 382,77, woraus also die wahrscheinlichen Fehler $= 0^s,701$ und $0'',439$ folgen. Beide Fehler sind grösser als ich es nach den ersten Versuchen erwartet hatte, die für eine einzelne Position die wahrscheinlichen Fehler $0^s,741$ und $0'',448$ ergeben hatten, woraus der wahrscheinliche Fehler einer Position des Catalogs, da jeder derselben wenigstens 2 Beobachtungen zu Grunde liegen, geringer als $0^s,524$ und $0'',345$ hätte folgen sollen. Ein Grund dieses Unterschiedes liegt darin, dass bei jenen älteren Untersuchungen alle bekannten in der Zone vorkommenden Sterne benutzt wurden, um dadurch die Nullpunkte zu bestimmen, dass daneben auch noch die Neigung des Stundenstrichs und das Intervall der Declinationsstriche ermittelt, und somit alle Constanten aufs Schärfste bestimmt wurden, während bei den anderen Zonen meistens

*) Bonner Astronomische Beobachtungen Bd. II. p. L. der Einleitung.

nur 16 bis 20 Sterne zur Ermittelung der Nullpunkte benutzt wurden, und die andern Constanten auch nicht mit der äussersten Schärfe bekannt waren *). Aber hieraus allein lässt sich der Unterschied nicht ganz erklären, und es scheint somit, dass die erlangte grössere Uebung nicht vermocht hat die Vergrösserung des Fehlers zu compensiren, die durch die grössere Schnelligkeit erzeugt ist, mit der die späteren Beobachtungen angestellt wurden. Jene früheren Rechnungen beziehen sich nämlich auf an Sternen ärmste Gegenden des Himmels, und es wurden ausserdem früher schwache Sterne viel häufiger ausgelassen als jetzt. Wir hätten diese Methode auch später befolgen können, dadurch wäre aber die Gefahr auch Sterne 9^m zu übersehen in hohem Maasse gewachsen, und gegenüber der Beseitigung dieser Gefahr muss die kleine Vergrösserung der Unsicherheit zurückstehen. Uebrigens ist diese Unsicherheit, wenn auch grösser als ich sie gewünscht hätte, doch immer noch ziemlich gering, und geringer, als sie bei jeder andern Beobachtungsmethode gewesen wäre. Die Declination wird nach der Wahrscheinlichkeit nur etwa 2mal unter 15 Fällen über 1″ fehlerhaft sein, und der Fehler 1″,5 unter 47, 2″ unter 472, 2″,5 unter etwa 8000 und 3″ nur unter 250000 Fällen einmal überschreiten. In Rectascension aber wird nur etwa unter 8000 Fällen ein Fehler von über 4^s oder einer Bogenminute vorkommen. Dies letztere gilt freilich nur von den helleren Sternen bis inclusive denen der 9ten Grösse; die Rectascensionen der Sterne 9.10^m, namentlich der schwächeren dieser Classe, scheinen durchschnittlich etwa 1 bis 2 Secunden zu früh beobachtet worden zu sein, weil sie wegen ihrer Schwäche zu früh aus dem Gesichte verloren wurden. Uebrigens ist auch zu berücksichtigen, dass doch auch die Positionen der zur Vergleichung benutzten Sterne nicht absolut genau, sondern mit häufig nicht ganz unbedeutenden Fehlern behaftet sind, sowie dass diese Fehler durch die nur flüchtige Reduction auf unsere Epoche noch vermehrt werden mussten, zumal die letztere nicht nach den Originalen, sondern nach den aus diesen berechneten Catalogen gemacht wurde. Und es ist bekannt, dass namentlich der Weisse'sche Catalog häufig nicht unbedeutende Reductionsfehler hat. Ausserdem sind diejenigen Zonen, in welchen wegen des grossen Sternreichthums die stärksten Fehler zu befürchten waren, wie oben erwähnt, an einem stärkeren Fernrohre wiederholt worden, welches bedeutend sicherere Resultate gewährte, so dass diese Zonen dadurch geringere Fehler geben werden. So folgt z. B. aus 140 Sternen der Stunde 6^u in -1^0 und $+2^0$, welche Zonen auf die angegebene Art wiederholt wurden, der wahrscheinliche Fehler in Rectascension nur 0^s,508, in Declination 0″,190. Und selbst diese Fehler sind wahrscheinlich noch etwas grösser, als sie im Mittel aus einer grössern Zahl von Sternen sich zeigen werden; denn sie sind in Declination nicht kleiner und in Rectascension sogar grösser, als die Fehler der Revisionszonen allein, die ich im Mittel aus 7 Zonen und 308 Sternen nur 0^s,495 und 0″,191 gefunden habe.

Es ist schon oben erwähnt worden, dass der Zweck der Durchmusterung auch das Auffinden aller gröberen Fehler in den Sternverzeichnissen einschliesst, und in der That hat die Arbeit zu einer grossen Menge von Berichtigungen theils der Cataloge, besonders von Bessel und Lalande, selbst, theils der zu ihnen schon vorhandenen Fehlerverzeichnisse geführt. Auch ist das Verzeichniss der in den Bessel'schen Zonen von -2^0 bis fast zur nördlichen Gränze aufgefundenen Fehler vollständig zusammengestellt, und nur die noch mangelnde Bearbeitung eines Theiles der nördlichen Zonen hat den Abschluss desselben und dadurch seine Bekanntmachung in diesem Bande verhindert. Es wird dem folgen-

*) Eine solche ganz scharfe Berechnung hätte eine ausserordentliche Zeit gekostet, deren Aufwand dem Zwecke nicht entsprechend gewesen wäre. Sollte es später von Wichtigkeit werden, eine Sternposition oder eine Beobachtung die sich als die eines Planeten erweist, genauer zu berechnen, so kann die schärfere Berechnung immer noch später gemacht werden, und wenn man namentlich diese durch die zunächst liegenden Sterne machte, würde sich der wahrscheinliche Fehler vielleicht auf die Hälfte reduciren.

den Bande beigegeben werden. Innerhalb der Gränzen des in dem vorliegenden Bande enthaltenen Catalogs ist es indess schon jetzt möglich, sich von der etwaigen Fehlerhaftigkeit einer Beobachtung von Bessel oder Lalande zu überzeugen, indem man bei der Abweichung einer solchen von der Position unseres Catalogs mit einer an Evidenz gränzenden Wahrscheinlichkeit wird annehmen können, dass diese die richtige, die von Bessel oder Lalande die fehlerhafte ist. Mit demselben Grade der Wahrscheinlichkeit wird man sich auch überzeugt halten können, dass einer Beobachtung aus den mehr genannten beiden Catalogen, die in dem unsrigen ganz fehlt, kein Stern am Himmel entspricht. Bei der bekannten Art, wie die Fehler in jenen Beobachtungssammlungen entstanden zu sein pflegen, wird es um so leichter sein, die wirklich beobachteten Sterne in unserm Cataloge aufzufinden, als solche stets mit K, respective L, oder wenn sie am hiesigen Meridiankreise neu bestimmt wurden, mit B bezeichnet sind, worüber sogleich das Weitere erwähnt werden wird.

Es ist nun noch übrig, die Anordnung des folgenden Catalogs zu erläutern. Derselbe beruht, wie schon mehrfach erwähnt, auf den Beobachtungen, die hier, sei es am Cometensucher oder Aequatoreal, sei es am Meridiankreise angestellt sind, und ist nach 1° breiten Zonen der Declination, und in diesen nach den Rectascensionen geordnet. Zur bessern Uebersicht und leichteren Orientirung trägt jede Pagina an der Spitze ausser der fortlaufenden Paginirung auf der äussern Seite den Grad der Declination, auf der innern die Stunden der Rectascension, denen die auf ihr verzeichneten Sterne angehören. Deren enthält die einzelne Seite 300 in jeder Zone besonders gezählt und in 5 Verticalcolumnen vertheilt, die zunächst an der Spitze die Nummer des ersten und letzten der in ihr enthaltenen Sterne tragen und wieder je 4 Unterabtheilungen haben, von denen die erste die Grösse der Sterne in Ganzen und Zehnteln ausgedrückt giebt, die zweite Minute, Secunde und Zehntelsecunde der Rectascension, die dritte Minute und Zehntelminute der Declination, während die volle Stunde jener und der volle Grad dieser über den entsprechenden Einzelcolumnen verzeichnet stehen. Die 4te Columne zeigt an, ob der Stern schon im Meridian bestimmt, und wo ein genauerer Ort desselben als der hier gegebene zu finden ist. Steht in dieser letzten Columne kein Buchstabe, so ist der Stern noch nicht vollständig bestimmt, oder findet sich wenigstens nicht in den gebräuchlichen Catalogen *). Bei den bestimmten aber bedeutet

B dass derselbe im Verlaufe der Durchmusterung am hiesigen Meridiankreise auf die früher angegebene Art beobachtet ist. Die Positionen der bezeichneten Sterne sind in AR. auf ungefähr 0ˢ.1 in Decl. auf 0″.1 genau reducirt angegeben. Die schärfere Reduction wird nach Vollendung des ganzen Werkes geliefert werden. Sollte aber die Kenntniss der genauern Position eines oder des andern dieser Sterne schon früher gewünscht werden, so bin ich gerne erbötig, sie aus den Originalbeobachtungen abzuleiten. — Ist der Stern mit

K bezeichnet, so findet er sich in den Königsberger Zonenbeobachtungen. — Ebenso weist

L auf Lalande's Histoire Céleste,

S auf Struve's Stellarum fixarum imprimis compositarum positiones mediae,

R auf Rümker's Catalog von 12000 Fixsternen,

P auf Piazzi's Catalog hin.

Bei den Sternen, die in mehreren dieser Verzeichnisse sich vorfinden, ist doch immer nur eine Quelle angegeben und zwar im Allgemeinen nach der obigen Reihenfolge.

*) Es wäre gewiss sehr dankenswerth, wenn Jemand die Mühe übernähme die Positionen der vielen bei Gelegenheit von Planeten- und Cometen-Beobachtungen bestimmten Sterne, die sich meistens in den periodischen Schriften zerstreut vorfinden, zu sammeln und geordnet und auf eine bestimmte Epoche reducirt zusammenzustellen. Selbst eine ganz rohe Angabe der Position, etwa auf Zeitsecunden und Bogenminuten würde schon sehr erspriesslich sein, wenn nur der Ort angezeigt wäre, wo die genauere zu finden ist.

Zone −1°

1—40				41—80				81—120				121—160				161—200			
	0ᵘ		−1°		0ᵘ		−1°		0ᵘ		−1°		0ᵘ — 1ᵘ	−1°			1ᵘ	−1°	
m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
8.8	1	24.8	56.0	8.3	16	16.3	20.7	K	9.5	32	49.3	9.5	9.0	49	36.9	15.9	K	9.4	7	6.3	36.3	B
9.2		33.9	3.9	9.2		28.0	4.5		9.3	33	10.4	11.1	B	8.8	50	34.7	31.7	R	5.8		26.9	44.6	K
9.0		45.8	33.8	9.5	17	19.1	48.7	B	9.0		26.8	46.0		9.3	51	3.7	50.2		9.5		57.6	32.5	
9.3	3	27.3	51.4	9.5	18	20.3	34.9		9.0		31.0	4.9	R	7.7		57.7	28.2	K	9.0	9	20.6	18.4	
9.5		27.5	31.0	9.5		58.1	59.9		9.5	34	0.5	14.0	B	8.8	52	9.1	57.2	K	9.5		29.6	42.7	
9.5		57.8	27.0	8.0	19	29.3	43.2	K	9.0		43.3	59.6		9.0		17.7	20.9		9.5	11	5.9	1.9	
8.0	4	6.3	54.9	K	9.5	20	10.2	30.5		8.5	35	13.4	8.8	K	9.5		29.2	29.2		8.0		13.6	37.1	K
9.5		21.0	53.8		9.5		52.0	21.8		8.7	36	1.3	40.4	B	9.0		47.2	50.9	B	9.3		20.0	49.0	B
8.3		35.1	3.1	K	8.8	21	43.8	28.3		9.5		30.0	48.0		9.3	53	9.6	0.6	B	9.3		30.4	9.6	
9.3	5	8.3	14.8		9.5		52.3	35.2		9.0	37	4.3	29.7		9.3		17.7	56.4		* 8.8		50.6	17.8	
9.5	6	20.8	46.9		7.7	22	25.7	7.6	K	9.3		5.5	50.0		8.4		24.8	49.5	R	5.8	12	23.5	17.8	K
8.8		50.3	21.8	K	7.8		29.8	54.5	K	9.5		38.9	56.5	B	8.8		29.7	38.9		9.5		32.0	57.6	B
9.4		55.0	59.5	B	9.5		51.7	0.9	B	9.0	38	14.0	10.4		9.4		35.0	40.0		8.5		37.6	35.7	
8.0	7	25.5	6.7	L	9.5		56.6	17.2		8.3		19.8	59.0		8.5	54	8.3	7.5	K	9.2		42.9	4.7	B
8.0		27.5	50.4	K	8.3	23	6.4	9.7	K	8.8		30.0	35.6	K	9.3		37.2	42.0		9.3	13	10.2	22.1	B
9.5		37.4	38.8		9.3	24	7.3	27.0		9.5		31.0	13.9		9.3	56	9.2	10.9		9.5		15.4	27.0	
9.2		37.9	36.1	B	9.5		49.3	45.9		8.8	39	11.0	37.6	K	9.1		29.3	49.7	B	8.8		47.1	53.2	
9.5	8	21.0	46.3		8.3	25	25.8	14.6	K	9.3		43.8	11.8		9.3	57	6.7	42.2		9.0	14	23.9	8.0	
9.5	9	28.1	48.3		9.0		41.0	40.1	K	8.8		45.3	56.6	K	9.3	58	13.2	37.8		7.2	15	10.5	12.4	L
9.0		39.8	52.8	K	7.5	26	7.8	26.3	K	9.3	40	13.8	59.3		9.5		18.0	1.1	B	9.5		15.7	58.3	aL
9.0		58.3	53.4		9.5		9.1	30.5		8.3		36.0	3.5	L	8.1		50.8	2.3	K	9.3	16	2.6	18.8	
9.5	10	16.1	29.1		8.5		18.0	10.6	L	8.0		57.3	17.3	K	9.5		58.5	23.9		7.8	17	17.5	44.0	K
9.0		18.9	50.0		9.5		37.0	36.0	B	9.3	41	12.2	49.4		9.5		58.8	27.6		9.2		23.0	40.9	B
9.5		51.6	31.8		9.4		44.0	19.7	B	7.0	42	31.7	2.3	K	8.0	59	1.0	31.7	K	8.8		47.3	48.7	B
9.5	11	11.3	57.3		9.5	27	33.8	12.1	Bh	9.5		57.8	53.4		9.4		21.9	1.8	B	9.0		48.9	14.2	B
9.5	12	12.3	49.7		* 9.3		49.3	38.0		* 9.0	43	28.7	8.5		8.3		23.1	43.6	L	9.5		58.6	14.9	
9.3		18.5	21.1	K	* 8.8	28	4.0	53.4		9.0		40.8	47.6	B	8.5		39.7	23.0	K	8.8	18	55.6	38.4	
9.3		54.6	21.1	B	5.8		8.8	19.4	K	8.8		52.8	19.7	K	9.3		55.6	20.2		8.5	19	0.6	13.0	K
9.4		59.8	16.2	B	9.5		10.8	12.5	B	8.5	44	14.3	16.3	K	9.1	0	9.9	53.8	aB	7.2		2.6	10.0	K
9.2	13	4.0	18.5	B	8.5		24.8	41.8	K	8.8		51.7	9.2	K	9.3		10.5	55.4	B	9.0	20	4.2	57.0	B
8.5		25.3	40.0	K	9.0		59.8	23.2	K	9.3		59.7	53.8	B	9.3		16.6	28.5		9.5		30.2	3.4	
9.3		39.7	3.8		9.5	29	34.3	60.0		9.0	45	30.8	15.6	K	9.5		45.6	29.9		9.5	21	5.6	4.0	B
9.5		50.7	25.5		8.8		45.8	39.4	K	8.3		31.2	9.9	K	9.0	2	21.6	30.9	R	8.3		17.6	49.5	
9.0	14	3.0	45.5		8.8	30	11.0	8.3	R	5.2		36.5	55.6	L	8.8	3	32.4	46.4		9.3		26.1	51.9	
9.3		3.5	1.8		6.8		41.8	18.7	K	8.8		59.6	33.4	R	8.8	4	20.2	44.7		9.0		33.6	35.0	
9.5		36.8	16.0		8.8		54.3	45.2	K	9.0	47	7.2	10.5	K	8.0		27.2	13.7	L	8.3	22	24.3	11.2	K
9.0		48.8	45.5	K	9.0	31	34.3	58.3	K	9.5	48	8.0	32.2		9.3	5	5.7	1.0		9.3		35.6	30.9	
9.5	15	40.8	43.5		9.5	32	0.8	31.4		9.0		22.5	34.7	K	9.3		34.6	49.9		8.7		41.6	4.9	K
9.5		43.6	11.1		9.4		6.0	46.6	B	9.0		42.0	11.2	K	9.5	6	21.7	39.5		8.3	23	9.2	34.4	K
9.3		56.3	5.4		9.5		19.8	19.7		9.5	49	33.2	1.8		9.5		36.2	48.1		9.3		29.2	23.7	
10pr.		+30.71	+3.34	10pr.		+30.68	+3.31		10pr.		+30.66	+3.29		10pr.		+30.63	+3.23		10pr.		+30.61	+3.16	
66ᵃ									105ᵃ										170ᵃ				
9.7	27	52.1	5.1	B					9.7	43	23.6	39.5	B						9.5	12	8.5	22.4	a

201—260					261—320					321—380					381—440					441—500				
	1°		−1°			1°−2°		−1°			2°		−1°			2°		−1°			2°−3°		−1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	23	33.9	41.2		9.3	48	34.0	18.2		8.0	14	20.9	1.8	K	9.0	34	39.3	12.8		9.0	58	46.3	8.6	
9.3		38.6	25.0		9.3		39.3	32.2		5.8		50.4	33.1	K	8.8	35	1.8	55.7		9.5	59	1.2	47.8	
8.8		45.9	0.0	K	9.5		42.5	25.6		9.0		57.5	6.4		9.3		27.4	1.0		8.9		34.0	43.1	B
9.5	24	28.5	2.2		9.3	49	35.2	44.0		9.0	15	2.9	42.0		9.0		52.8	45.2		8.9	0	17.5	5.6	
8.8		36.1	20.5	K	9.0	50	11.2	47.4		8.3		8.3	10.6	K	8.8		55.5	28.6		9.4		48.4	22.2	B
9.3	25	6.4	4.7		9.1		42.7	7.4	B	9.5		31.9	25.9		9.3	37	6.5	17.1		9.5	2	7.2	26.6	
9.5	26	5.2	31.2	B	8.8	51	45.9	42.7		9.4		55.8	10.8		9.0		7.3	39.3		9.0		14.7	33.5	K
8.8		31.7	21.6		8.8	52	21.4	25.2		8.7	16	5.3	12.0		8.0		21.3	27.5	K	9.5		41.8	47.3	
9.5	28	12.0	40.4		8.8		25.4	10.0		9.0		10.4	45.0		9.0	38	51.5	0.4		9.5	3	13.2	47.8	
9.3		12.6	30.6		9.0		33.4	53.8		9.0		14.5	18.0	B	9.0	39	9.6	37.7	B	9.0		59.7	15.1	
9.3		30.3	11.3	B	8.5		46.9	52.4		9.5		50.9	15.9		8.5		10.8	59.2	K	7.8	4	18.2	2.3	K
9.1		33.7	11.5	B	9.0		56.6	5.1		9.3	18	24.4	41.4		9.5		39.8	11.2		9.3		20.1	55.6	aB
9.0		41.1	44.6		9.2	53	11.3	36.7	B	9.2		42.3	6.2	B	9.5	40	6.8	46.7		9.0		20.7	19.2	
8.8		47.6	35.4	K	9.1		22.0	49.4	B	9.5	19	28.9	33.1		9.3		41.3	48.8		9.4		49.7	23.6	
9.0	29	22.1	28.8		*9.2		35.9	3.7		9.0		55.3	36.2		8.8	41	3.3	52.6		8.3		51.3	29.8	K
9.3		27.3	9.8	B	8.5		56.9	34.9	K	8.5		58.9	40.3	K	9.5	42	6.8	45.6		8.5	5	3.1	23.6	K
8.5		30.7	16.3		9.0	54	59.4	48.6		9.3	20	4.3	35.5		9.5	43	9.8	16.3		5.3		23.2	43.6	K
8.4		36.2	30.2	K	8.8	55	7.4	13.8		8.0		7.4	23.9	K	8.0	44	1.8	15.7	K	9.0		41.7	20.6	
6.5		51.9	6.2	K	9.3		16.4	44.2		8.9		14.0	3.9	B	8.5		3.0	46.2	K	9.5	6	7.2	8.1	
8.8	30	3.0	47.4		9.5		18.9	39.0	a	8.7		26.9	26.3	K	8.5		9.6	26.5	B	9.5	7	7.0	6.4	
9.4	31	0.0	42.3		9.0		40.3	1.8		9.3		45.9	21.1		8.0		47.8	13.6	K	9.5		11.0	12.6	B
9.4		20.2	36.9	B	8.8		50.9	46.2		*9.2	22	18.7	19.6		9.5		49.8	28.6		9.5		17.7	15.9	
9.3		38.6	2.2	B	9.3	56	9.6	19.8	B	9.0		36.4	2.8		9.5		50.5	38.6		9.3		38.2	27.6	
9.0		40.9	32.5	B	9.3		14.0	45.5	B	9.5	23	4.1	10.3		9.5	45	39.8	46.0		9.5		57.7	18.9	
8.3		41.5	10.9	K	7.3		22.8	2.5	K	8.8		6.3	27.1	B	9.5		42.5	34.1		8.5		58.2	42.2	K
9.3		52.3	30.1		9.3		39.9	47.3		9.5		23.8	12.3		8.8		43.3	50.9		8.4	8	7.7	1.4	K
8.5	32	10.7	27.4	K	9.5	57	37.4	35.5		9.0		33.9	2.9		8.8	46	3.3	9.5		9.5		40.7	54.1	
9.2		20.8	40.7	B	8.3		47.4	39.7	K	9.1		45.9	14.5		9.5		22.3	27.5		9.5	9	29.7	59.3	
8.5		39.2	27.8	K	8.8	58	11.4	37.9		9.5		47.4	14.6		9.3		23.5	10.1		6.2	10	57.2	26.3	K
7.8	33	57.3	14.4	K	9.5		35.9	56.2		9.3	24	38.5	14.7		9.3		28.3	55.0	a	9.5	11	15.2	47.1	
9.0	34	35.3	12.7	K	9.3	59	40.4	59.7		9.0		43.0	31.7		9.5	47	1.4	4.0		9.3		23.2	48.9	
8.0	35	1.3	46.4	K	9.5		43.4	49.1		8.5		45.9	50.3	K	9.5		33.3	12.2		9.4		23.7	0.9	
9.4		42.2	47.2		7.5	0	14.4	18.7	K	5.6		46.0	40.3	K	9.5		57.8	57.4		9.3		28.8	33.3	B
8.4		59.5	17.8	K	9.3		23.9	45.8		8.7	25	5.7	23.0	B	8.5	48	5.3	2.8		9.5		40.2	29.0	
9.4	36	41.0	52.8	B	9.5		54.4	40.7		9.0		50.3	45.0	B	9.0		15.3	23.7		*var*	12	2.5	36.0	
8.8	37	20.0	13.7		8.3	1	4.6	6.7	K	9.2	26	0.0	34.0		9.5		34.8	11.8		9.5		56.2	24.8	
8.8		34.0	46.4		7.8		21.9	6.7	K	9.4		0.7	51.4		9.5		57.3	45.5		8.6	13	48.0	3.6	K
9.2	38	5.3	7.7		9.3		38.9	17.6		9.1		8.3	45.9	aB	9.5	49	40.3	43.1		9.3	14	12.7	36.0	
8.7	39	6.0	2.4		9.0	2	21.9	38.3		8.8		44.9	51.4		7.5		47.3	8.7	K	9.0	15	13.8	2.7	
9.3		7.0	20.9		9.4	3	4.0	20.3	B	8.8	27	31.4	49.0	K	9.5	50	17.5	2.4		9.5		31.5	53.1	
9.3		26.5	33.3		9.0	4	41.4	2.9		9.2		53.6	7.1		9.4		45.1	18.2	B	9.0		50.3	60.4	K
9.5	40	2.0	1.0		9.3		42.4	45.2		9.2	28	32.3	35.9	B	9.4		47.3	29.8		9.3	16	18.0	40.8	
9.5		30.7	32.5		9.5	5	16.9	47.5		7.7	29	4.2	16.1	K	9.5		50.8	59.2		9.5		30.8	1.2	
8.0		33.5	40.6	K	9.5	6	15.0	6.5		9.0		12.2	24.8		9.5	51	29.0	10.0		9.3		58.2	15.1	
9.4	41	7.7	21.7	B	9.3		34.4	36.8		8.8		36.7	47.6	B	9.3	1	29.8	28.8		9.5	17	2.4	9.0	a
8.8		15.7	5.9		8.3	7	4.9	52.4	K	9.0		42.2	38.6		9.0	52	6.3	58.2		9.3		12.2	61.4	a
9.5		33.0	27.4	B	9.0		44.6	5.5		9.3		45.2	14.3		8.5		14.1	13.0	B	8.7	18	2.7	40.2	K
9.3	42	0.5	9.6		9.5		51.4	19.0		9.2		54.5	18.9		8.2		30.0	15.6	B	9.5		7.7	15.1	
9.0		28.0	56.0		8.5	8	44.4	57.5		9.5	30	20.2	6.0		8.2		43.1	15.7	B	9.5		11.0	52.7	
9.3	43	5.5	22.7		9.5	9	36.4	10.0		9.5		56.2	25.3		9.5	53	31.9	31.5		9.0		23.2	13.7	
9.0		27.0	44.4		9.0		55.4	37.9		9.5	31	8.4	52.9		9.5		46.1	25.6		9.5		32.7	61.0	a
8.2		30.3	0.5	K	8.8	10	27.4	39.3		8.8		18.7	52.4	B	9.3	54	6.0	9.5		9.1		39.0	46.7	
8.8		32.7	23.3		9.3		32.9	30.3		9.3		20.3	10.3	B	8.7		24.8	45.3	K	8.8		39.7	9.8	
8.8	44	13.5	12.6		9.5	11	3.9	31.7		9.2	33	8.0	32.1	B	8.0		26.7	29.7	K	9.5		43.0	48.2	
8.8	45	16.0	22.0		9.5		30.8	5.6		8.8		8.7	18.1		9.5	55	29.0	45.7		8.7		52.3	32.5	K
9.5	46	5.9	14.8	B	8.0		53.4	26.5	K	9.2		42.8	42.7		9.5		39.2	24.4		9.5		57.1	44.9	B
9.5		17.8	15.2	B	8.2	12	42.3	8.5	L	6.2		49.7	19.2	K	9.3	56	48.2	14.7		9.5	19	11.5	58.2	
9.1		58.0	20.9		8.8		47.9	56.6		9.1		55.3	51.5	K	9.1	57	1.2	51.0		9.5		13.6	37.0	B
9.3	47	4.5	31.5		9.5	13	8.9	22.4		9.0		58.3	45.1		9.3		26.8	58.3		9.5	20	52.5	24.1	
8.0		5.5	55.0	K	8.8	14	0.9	19.0		9.3		59.8	31.0		9.1		28.1	53.0	B	9.5		52.5	17.5	
10pr.		*30.58*	*3.07*		*10pr.*		*30.66*	*2.89*		*10pr.*		*30.51*	*2.70*		*10pr.*		*30.48*	*2.49*		*10pr.*		*30.46*	*2.24*	

274a				
9.6	53	27.9	55.4	B

341a				
9.5	22	16.7	9.5	B

1° — 3° — 1°

501—560					561—620					621—680					681—740					741—800				
	3ª		−1°			3ª − 4ª		−1°			4ª		−1°			4ª		−1°			4ª		−1°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
9.5	22	55.7	34.2		8.3	49	23.2	58.0	K	9.5	13	46.8	28.8		9.5	29	49.4	45.2		9.5	44	40.9	2.2	
9.5		56.2	19.2		8.8		28.9	18.1	K	9.5	14	18.8	24.9	B	9.0	30	10.9	23.2		8.3	45	5.4	17.0	K
9.5	23	41.6	22.2	B	9.3		56.9	60.8		9.5		26.9	52.8		9.0		30.4	8.6		8.5		45.9	30.1	K
9.5	24	8.1	25.5		9.5	50	2.7	26.7		9.5		59.4	38.0		9.0		54.8	17.0		8.5		47.1	29.8	K
9.5		12.5	21.9	B	8.7		9.9	33.6	K	9.5	15	6.0	16.3		9.5	31	17.8	35.6		8.8		56.9	60.4	K
9.5		59.0	26.2		9.5		31.4	10.8		9.5		35.4	16.3		8.8		25.4	10.1	K	9.5	46	10.8	32.2	
9.5	25	39.8	36.4		9.3	51	13.9	37.7		8.5		41.0	43.2	K	9.5		39.0	8.6		9.3		17.4	25.0	α
8.5		40.8	47.1	K	9.3		35.4	22.2		9.2		49.4	5.1	B	9.5		52.0	8.6		8.8		45.4	23.6	
9.5		59.5	45.3		9.3		43.9	14.4		8.8		49.9	36.7	K	7.7	32	28.9	20.5	K	8.3		50.8	57.2	K
9.3	26	0.8	60.7	α	9.0	52	40.4	52.2	K	8.5		57.9	18.3	K	9.5		50.9	11.5		9.5	47	8.9	43.7	
9.5		8.2	24.8		9.0	54	13.2	24.4		8.8	16	6.4	33.5		9.3		55.9	44.3		9.5		12.9	21.3	
9.0		27.2	6.0		5.5		13.2	57.4	K	8.9		9.9	55.5	B	8.5	33	17.4	30.1	K	9.0		42.7	27.2	B
8.5	27	48.8	13.0	K	9.5		55.4	15.1		9.4		13.3	51.7	B	9.0		20.4	17.0		9.2		46.6	19.8	B
9.3	28	37.8	17.5		7.2	55	15.9	12.3	L	9.5		31.9	28.3		9.3		41.9	37.8		8.8		54.4	10.5	
9.5		53.8	56.2		9.5	56	1.4	10.5		9.0		37.5	4.2	K	8.5		42.4	11.3		8.8	48	8.4	29.8	
7.8	31	32.2	60.3	L	9.0		32.4	6.8		9.5	17	9.9	32.5		9.5	34	1.4	1.8		9.5		10.9	16.7	
8.9		42.7	1.0	K	8.3		47.9	34.0	K	9.5		18.7	8.8		8.5		10.0	3.2	K	9.3		23.0	55.3	
8.5	32	19.0	15.9	B	9.5		55.4	39.1		9.0		25.9	17.8		9.3		10.4	25.6		8.8		39.9	53.6	
6.7		36.8	36.0	K	9.3		58.4	53.6	K	9.3		33.4	38.2		9.0		13.9	58.4		9.3		46.0	42.5	
9.5	33	34.0	23.7		9.5	57	51.4	0.9		9.5	18	16.4	55.0		8.5		48.4	56.7		9.5	49	4.4	3.2	
9.5	34	23.7	28.3		7.8		54.9	24.6	K	7.5		20.4	45.6	K	9.3		55.6	17.8	B	9.5		15.4	7.7	
9.3	36	0.9	16.7	B	8.5	58	5.3	38.1	L	9.5		29.9	41.1		7.5	35	2.4	12.8	K	7.3		57.4	18.0	K
9.4		41.0	15.2	B	9.0		31.4	3.1	K	9.2		31.9	43.9	K	9.5		8.0	15.6		8.8	50	21.4	45.0	
9.5	37	4.3	51.1		9.0		44.9	45.1	K	9.4	19	11.8	7.9	B	9.5		28.4	23.1		9.0	51	17.9	37.7	
9.4		3.7	8.9	B	9.3		51.4	52.1		9.4		56.3	55.0	B	9.0		50.4	43.9		8.8		22.9	11.4	K
5.8		10.4	36.8	K	9.5	59	54.9	29.3		9.3	20	5.9	27.0		8.8		53.4	34.5		9.3		26.8	52.8	
9.5		20.8	53.8		9.3	0	3.9	19.2		9.5		41.9	48.1		9.0		57.9	22.2		9.5		27.4	11.3	K
9.0		26.8	13.3	K	9.2		19.9	60.0	K	9.3	21	18.9	42.1		8.5	36	7.4	22.4		9.5		28.6	8.9	
9.3	38	25.2	20.4		9.5		29.0	24.5		9.5		49.9	43.2		8.8		44.1	13.6		9.5		49.0	45.8	
9.3		38.2	38.8		9.2		39.4	6.6		9.5		50.4	49.7		9.5		57.4	16.0		9.5	52	14.9	11.8	
9.5	39	35.2	55.6		9.5	1	22.4	16.2		9.5	22	11.4	61.5		9.5	37	9.4	39.4		9.5		38.9	29.5	
9.5		37.0	14.3		9.5		23.6	40.7		9.0		17.4	7.0	B	8.3		16.4	44.2	K	9.5		50.9	37.8	
9.0		46.2	55.0		9.3		59.7	48.5		9.2		26.9	14.9		9.5		21.9	7.7		9.3	53	20.9	28.5	
9.0	40	41.6	0.0	K	9.5	2	14.4	26.0		9.5		57.9	13.5		9.5	38	9.8	39.0		8.7		38.9	28.8	
9.5		56.8	47.0		9.5	3	30.4	30.7		9.5	23	12.4	2.9		9.5		15.4	46.6		9.5		57.9	31.2	
9.0	41	4.2	57.7	K	9.5		41.9	32.3		9.3		15.0	9.4		9.5		20.4	47.4		9.3	54	3.0	5.3	
9.0		39.7	32.9		9.5		45.4	38.9		8.8		21.9	45.7		9.3		26.9	48.0		9.5		10.4	28.8	
9.0		57.0	58.7	K	9.5		49.9	35.1		9.0		49.6	8.4		9.2		28.0	12.6	B	9.5		44.4	53.5	
7.5		57.7	53.2	K	9.5	4	57.4	59.6		8.8		54.4	9.1		9.5		55.4	29.7		8.8		53.4	56.0	
9.0		59.8	18.1		7.5	6	20.4	31.3	K	8.0	24	23.4	39.8	K	9.5	39	59.9	56.0		9.2		52.2	6.6	
9.3	42	15.7	39.8		9.5		25.8	14.9		8.9		32.6	14.3	B	9.5	40	3.4	14.8		9.3		57.7	24.7	B
9.5		18.5	8.8		9 2		39.4	12.4		9.3		47.4	24.0		9.3		10.9	13.5		9.5	55	21.4	48.0	
9.5		28.2	33.5		8.5		57.4	59.6	L	8.3		49.4	50.8	K	9.1		14.9	58.7		9.4		30.1	59.7	B
7.0		55.2	58.1	K	8.5	7	36.9	22.1	K	9.5	25	23.4	30.1		9.3		37.0	36.9		9.5		32.7	51.9	B
9.5	43	47.8	6.0		8.8		50.9	34.5	K	9.4		34.5	9.1	B	9.5		46.9	8.7		9.3		38.1	59.4	αB
9.0	44	5.3	49.1	K	9.5		52.7	43.0	B	9.0		53.0	41.2		9.0		51.9	20.7		9.5		53.3	51.0	B
9.5		41.4	49.8		8.8	8	22.9	56.8	K	8.5		55.9	36.0		9.5	41	11.0	8.6		9.2		55.9	53.6	α
7.0		47.8	34.3	K	8.8	9	22.6	7.9		8.8	26	54.9	18.8		9.5		15.0	61.0		9.5	56	11.7	44.6	
7.3		54.9	5.0	K	8.8		24.9	29.6	L	9.1		57.8	3.1		8.5		18.4	37.0	K	9.5		21.4	8.4	
9.3	45	10.4	51.2		9.5	10	2.4	9.3		8.9	27	8.4	2.5		9.5		26.4	41.8		9.3		45.9	12.2	
8.8		19.9	26.0	K	9.0		6.4	52.7		8.5		13.9	16.3		8.3		56.9	8.0	K	9.5	57	5.8	35.6	
9.5		24.9	21.6		8.8		13.4	14.5	L	9.5		22.9	37.4		9.3	42	12.9	25.2		9.3		9.0	52.9	
9.2	46	20.4	56.3	α	9.5		33.9	30.0		9.0	28	7.9	39.1		9.5		36.4	22.5		8.3		30.4	34.9	K
9.5		29.9	35.7		9.5	11	32.9	47.9		9.3		10.4	44.6		9.0	43	9.9	11.5		8.8		38.9	38.7	
9.5		30.2	11.2		8.3		33.3	15.9	K	9.3		38.9	33.5		9.4		29.4	22.6	B	8.3		43.9	23.5	
9.5		53.9	31.6		9.0	12	12.4	36.9		9.3		42.0	43.1		9.5		47.4	7.3		8.5		45.8	30.1	K
9.5	47	3.9	31.9		9.5		42.9	3.8		9.5		45.4	7.3		9.3	44	4.3	26.5		9.5		48.8	14.5	B
8.8		35.4	42.2	K	9.0		48.3	59.7		9.3		50.9	44.2		9.1		5.6	24.8	B	9.0	58	14.0	15.0	
9.0	48	12.9	30.5		7.5	13	10.9	39.0	L	9.4	29	11.9	25.7	B	9.3		34.8	29.6		9.0		35.3	60.8	K
9.5		45.9	19.8		9.5		24.8	33.0		9.2		40.9	13.7		9.2		38.1	11.5		8.0		50.0	26.4	K
10pr.		*30.43*	*1.93*		*10pr.*		*30.42*	*1.66*		*10pr.*		*30.40*	*1.38*		*10pr.*		*30.39*	*1.18*		*10pr.*		*30.38*	*0.97*	

801—860

m	4ª—5ª	−1°	
	′ ″	′	
9.3	59 14.9	4.0	B
9.5	28.3	5.0	
9.0	29.4	36.2	K
9.5	42.8	5.5	
9.0	0 9.2	42.3	
9.3	13.6	38.6	
9.5	16.0	30.7	
9.5	26.5	28.3	
9.5	38.4	35.6	
8.7	39.5	4.2	K
8.7	1 10.0	43.4	
9.1	25.1	39.6	B
9.1	28.8	4.7	a
8.5	33.9	26.2	K
9.4	34.5	53.3	B
9.5	48.8	10.8	
9.0	2 4.3	40.7	K
9.5	24.9	40.0	
9.3	32.3	57.7	
8.5	45.0	20.2	
9.3	3 2.9	12.7	
9.4	10.0	26.5	
8.6	37.5	57.2	L
9.4	4 10.3	21.2	
9.5	29.7	28.7	
9.2	45.5	8.5	
9.1	5 0.2	58.6	K
9.4	16.7	31.7	
9.2	16.9	44.5	K
9.2	28.3	44.1	K
9.5	41.4	27.8	
9.2	6 17.0	42.6	K
9.3	19.9	18.6	
8.8	26.3	3.4	K
9.5	7 8.6	54.0	
9.5	42.9	14.0	
6.5	58.0	34.9	K
9.5	8 18.4	49.3	
8.9	27.4	27.2	
9.3	9 0.4	22.5	
8.7	6.7	48.9	K
9.3	12.0	30.8	
9.0	13.1	1.5	K
8.8	18.6	3.7	K
9.2	40.5	50.9	
9.5	47.5	34.5	
9.4	57.7	53.9	
9.3	10 1.0	31.0	K
9.5	11.9	57.5	
9.5	56.5	58.2	
9.5	11 3.5	45.3	
9.1	6.4	15.4	
9.2	9.0	17.4	a
9.4	11.3	25.9	
8.6	45.6	15.1	B
9.5	46.3	57.9	
9.4	12 0.0	30.0	
9.3	14.1	16.3	
6.5	15.9	33.9	K
8.4	17.1	15.8	B
10pr.	*+ 30.38*	*+ 0.90*	

861—920

m	5ª	−1°	
	′ ″	′	
9.0	12 19.0	30.2	K
8.5	21.0	41.5	K
9.5	27.4	13.1	
9.5	35.0	28.4	
9.5	36.4	44.6	
9.5	38.3	23.9	
9.4	38.8	10.6	B
9.5	51.9	38.0	
9.5	13 15.4	17.6	
9.5	39.8	36.8	
9.5	53.4	53.0	
7.8	14 9.3	42.2	L
9.5	55.9	31.5	
9.0	15 15.9	11.0	K
9.5	22.4	41.2	
9.5	40.9	24.2	
9.5	52.5	42.9	
8.9	16 2.5	34.8	
8.5	4.0	8.1	K
9.3	17.3	0.0	K
9.3	23.8	5.1	K
7.2	28.5	0.8	K
9.3	31.0	31.7	
9.3	35.8	32.8	
9.5	56.6	46.0	
6.0	17 6.6	1.6	K
9.5	31.3	44.6	
9.5	54.0	21.1	
7.6	18 16.6	37.6	K
9.5	27.8	59.6	
9.5	27.8	11.1	
9.5	52.5	51.4	
9.5	19 20.5	59.3	
9.5	28.5	12.5	
9.1	29.6	37.5	
8.2	44.8	12.3	L
8.0	48.5	30.4	L
9.3	49.2	58.3	a
9.5	55.0	14.0	
9.5	20 16.8	44.4	
8.7	25.4	56.3	K
9.5	27.0	20.0	
9.5	31.7	21.5	
9.2	34.9	5.2	
8.0	47.7	47.0	K
8.9	50.9	53.7	
9.4	21 6.0	46.1	
9.5	10.8	57.0	
9.0	36.5	52.7	K
9.4	43.2	47.1	
9.0	22 12.4	19.0	P
9.5	13.0	23.5	
5.5	22.5	11.7	K
9.0	29.4	46.2	K
9.5	31.0	8.6	
9.5	37.0	34.3	
9.5	39.0	41.4	
8.4	45.7	52.2	K
9.4	47.5	33.8	
9.2	49.5	8.7	K
10pr.	*+ 30.37*	*+ 0.60*	

921—980

m	5ª	−1°	
	′ ″	′	
9.4	22 53.0	0.1	
9.5	55.2	37.8	
9.5	23 0.4	29.8	
9.5	21.2	3.2	
9.5	42.0	18.2	
9.5	24 9.8	51.1	
9.3	11.8	57.0	a
9.0	19.6	14.0	
8.8	24.9	58.9	K
9.4	27.8	42.3	
9.3	44.3	34.2	
9.5	45.8	43.5	
8.8	54.6	42.4	
9.5	25 22.3	56.0	
6.0	23.3	41.8	K
9.2	23.4	8.0	
9.3	30.5	41.0	
8.6	43.9	21.0	
7.5	49.0	49.5	K
9.5	51.5	0.9	
9.5	56.2	50.1	
9.1	26 3.1	10.0	
7.4	11.0	15.0	L
9.5	18.8	42.2	
9.5	21.5	32.3	
9.2	30.1	49.1	K
9.5	30.5	39.2	
8.8	40.2	50.5	K
7.7	42.4	7.8	L
7.2	43.9	34.1	L
8.2	51.8	60.8	K
9.1	27 19.0	50.7	
8.3	26.2	2.9	
9.5	39.3	59.5	
9.3	45.0	30.0	
9.3	56.5	59.9	a
9.3	28 0.2	7.9	
9.5	5.1	8.9	
9.5	6.5	26.4	
9.3	12.2	42.1	
8.9	13.9	56.5	
9.5	15.5	39.2	
9.3	16.5	51.4	a
9.3	21.9	1.1	
8.7	26.0	5.2	S
9.0	27.5	5.1	
9.3	39.2	29.5	
8.8	39.9	51.1	
2.0	52.5	17.6	K
9.5	54.6	36.2	
8.6	59.2	43.4	
9.4	29 8.5	51.0	B
9.3	11.8	19.6	
9.0	15.4	7.4	
9.5	32.2	30.7	
9.5	36.7	24.7	
9.5	38.0	32.3	
9.3	43.7	41.5	
8.5	56.4	45.0	K
9.2	30 2.2	51.1	
10pr.	*+ 30.37*	*+ 0.48*	

981—1040

m	5ª	−1°	
	′ ″	′	
9.5	30 4.5	8.5	
9.1	17.0	31.8	K
9.5	23.5	23.1	
8.8	30.7	39.5	K
8.8	49.2	50.4	
9.5	49.8	8.2	
8.1	53.9	15.3	K
8.6	31 11.1	7.6	K
9.4	28.9	15.6	B
8.4	34.4	14.4	K
9.0	42.9	19.7	
9.5	59.7	20.0	
9.5	32 0.2	11.3	
9.2	5.4	40.0	
9.4	17.4	27.0	
9.4	36.6	35.0	B
8.7	38.7	60.8	L
9.1	45.1	48.3	a
8.4	45.2	31.4	K
8.8	47.2	45.7	
8.6	53.1	32.1	K
9.4	55.5	35.6	B
9.5	33 9.2	28.5	
6.2	29.7	12.2	L
8.4	37.9	34.0	K
9.3	39.6	13.7	
9.5	39.7	55.7	
9.1	56.2	5.0	K
8.9	34 0.1	24.0	
9.4	16.6	45.9	aB
9.5	35 35.5	11.6	
7.8	50.8	40.0	K
8.9	36 21.3	0.2	
9.5	36.0	29.0	
9.5	51.3	1.3	
9.2	37 14.4	40.0	
9.5	16.5	43.4	
9.3	27.5	30.7	
8.6	38 7.2	39.7	
9.3	9.8	58.0	
9.5	12.2	31.9	
9.2	52.9	34.6	
9.2	39 36.7	43.3	
9.4	36.8	46.8	
9.3	44.0	33.5	
9.0	44.9	25.2	R
9.5	52.2	0.2	
9.5	40 51.8	51.5	
9.5	41 11.4	15.3	
7.8	22.6	50.4	K
7.8	25.6	32.7	K
9.0	44.6	57.2	K
8.5	46.8	47.7	K
9.2	50.1	28.0	
9.5	56.8	54.4	
9.5	43 4.1	60.3	
9.5	15.3	32.8	
8.2	18.4	27.9	K
9.0	19.8	27.9	K
8.9	27.7	19.0	
10pr.	*+ 30.37*	*+ 0.37*	

1041—1100

m	5ª	−1°	
	′ ″	′	
9.5	43 39.0	18.8	
9.5	43.5	51.8	
9.5	46.0	4.6	
9.6	44 +1.0	4.6	
9.4	25.9	56.2	a
9.2	37.7	22.9	
8.9	42.9	3.7	K
9.3	49.2	58.7	a
9.5	45 17.7	55.9	
9.4	26.3	30.0	
9.5	37.0	4.0	
9.2	37.2	52.0	a
9.5	46 1.0	61.0	
9.5	2.9	35.9	
9.2	8.7	18.5	
9.5	37.2	2.3	
9.4	43.9	51.1	a
9.5	54.5	43.1	
8.2	47 1.3	6.2	K
8.2	47.9	57.7	K
9.5	50.0	1.8	
9.5	50.5	32.5	
9.5	54.8	39.4	
9.1	48 10.8	5.6	a
9.5	31.5	46.7	
9.5	34.5	40.5	
9.5	41.5	20.0	
9.5	49.0	37.8	
9.5	49 3.2	19.8	
9.0	9.1	51.3	
9.5	21.2	31.7	
9.4	24.3	1.6	
8.4	30.2	11.2	K
9.5	52.5	8.3	
9.2	50 21.7	50.5	
9.5	39.0	51.4	
9.5	42.9	38.2	
6.9	49.5	0.6	L
9.4	51 22.6	5.2	
8.7	33.6	20.8	S
8.4	34.1	7.5	K
9.5	52.8	45.5	
7.4	52 17.6	26.5	L
9.5	53 7.0	42.5	
9.5	17.2	50.1	
9.5	20.1	2.0	
9.1	24.5	37.1	K
9.3	43.6	34.2	
9.5	44.3	11.3	
9.5	54 19.2	34.2	
9.3	24.7	46.1	
8.5	26.1	40.0	K
9.4	41.3	4.6	
9.5	55 11.5	30.1	
9.5	31.4	27.5	
9.5	56 17.5	11.1	
9.5	19.2	3.3	
9.5	21.5	35.6	
9.4	37.9	30.3	
9.5	57 4.1	27.2	
10pr.	*+ 30.37*	*+ 0.15*	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5ᵉ—6ᵉ				6ᵉ				6ᵉ				6ᵉ				6ᵉ		
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.3	57 9.7	54.4		9.5	7 29.0	11.9		8.8	15 49.7	32.0		9.3	27 10.3	15.3		9.0	35 14.6	21.0	
9.1	12.6	33.4	*a*	9.3	35.3	57.0		9.5	16 1.4	54.8		9.5	13.9	58.2	*a*	9.5	24.2	9.0	
9.5	17.2	35.4		9.3	41.5	48.0		9.5	13.2	47.7		9.3	20.2	5.2		9.5	29.7	8.0	
7.4	23.4	34.1	K	9.5	54.6	8.2		9.5	26.4	3.3		9.5	21.2	2.9		8.8	40.5	57.9	
8.5	34.4	7.0	K	9.5	59.0	26.3		9.5	31.5	52.8		9.3	30.7	52.9		9.3	40.6	30.5	
9.5	35.5	48.7		7.8	8 6.7	21.3	K	9.5	35.0	25.1		9.5	48.9	48.0		9.3	42.6	35.9	
9.5	58 7.8	45.7		9.5	11.5	50.2		9.5	39.5	33.4		9.5	49.9	37.1		9.3	51.9	15.1	
9.0	12.2	13.8	K	9.3	19.1	12.3	K	8.9	48.3	24.2	K	8.3	52.4	23.8		9.5	36 8.9	1.8	
9.5	19.5	58.5		9.3	43.8	33.5		9.3	49.4	52.5		8.5	28 26.4	33.8		7.8	15.4	12.7	K
9.5	36.2	39.3		9.3	47.8	29.8		9.3	49.4	0.6	B	9.2	46.4	9.8		9.5	43.9	57.0	
9.0	59 9.5	1.3		9.2	48.3	13.9		7.2	17 13.4	21.1	K	8.9	49.4	25.5		9.2	53.9	8.8	
9.2	42.2	41.5		9.5	58.6	19.4		9.1	28.1	43.1		9.5	56.0	58.6	*a*B	9.3	57.4	29.3	
9.4	50.9	21.7		9.5	9 4.0	60.4		9.5	30.2	17.0		9.2	29 10.6	37.5		9.4	37 0.6	43.4	
8.6	0 1.9	56.2	K	9.5	4.2	35.9		9.5	18 19.5	46.6		9.0	18.5	30.7		9.4	2.1	42.2	
9.5	5.7	38.3		9.5	6.5	4.7		9.1	29.3	37.8	*a*	8.9	18.8	3.0		9.5	4.2	35.0	
8.8	10.4	13.0	K	9.4	22.3	9.0		8.5	39.7	44.4		8.3	31.7	48.2	K	9.5	21.9	50.8	
9.5	12.0	25.2		9.5	44.9	19.3		9.0	50.9	28.8		9.1	33.5	7.3	B	9.4	24.0	56.3	
9.5	28.5	55.2		9.5	55.7	37.3		9.4	58.5	22.2		8.7	38.4	56.9	K	9.3	24.6	33.3	
9.5	52.7	30.8		9.5	58.9	5.6		9.1	19 7.5	16.4	B	9.0	47.1	1.1	B	9.3	26.8	29.1	
8.4	53.5	24.1	K	9.5	10 11.7	23.1		9.0	11.0	44.7		9.5	30 7.2	26.1		9.3	31.5	57.8	
8.7	1 0.5	55.7	K	9.5	12.5	25.8		9.3	16.0	9.9		8.4	9.9	30.1	K	9.5	33.9	9.3	
9.5	3.3	16.8	B	9.3	13.7	31.3		6.5	20.0	25.3	K	9.5	19.9	28.7		8.8	53.9	57.2	
9.5	11.8	48.8		9.5	28.1	3.1		9.5	46.1	25.6		9.1	37.1	28.6		9.5	38 6.5	53.1	
9.5	16.8	22.0		9.5	30.8	16.1		9.5	51.0	7.9		9.5	38.9	22.3	*a*	8.7	10.5	16.9	L
9.3	32.6	21.2		9.0	39.7	37.3		9.0	20 19.6	43.8		9.0	44.2	23.6	K	9.5	15.9	54.9	
9.5	39.1	4.8		9.4	11 0.4	10.5		9.2	23.8	17.3		8.3	45.3	19.0	K	9.5	21.2	39.5	
9.5	58.6	31.5		9.5	43.2	40.7		9.0	27.1	46.9	B	9.5	57.7	19.8		9.2	36.9	6.1	K
9.5	2 2.4	27.6		7.9	46.9	18.6	K	9.5	29.7	11.9		9.5	31 3.9	16.7		9.3	37.0	16.7	
9.5	7.1	9.8		8.8	56.2	19.7		9.5	30.9	53.4		9.5	4.2	32.0		8.6	42.5	32.1	K
9.5	20.9	21.4		9.5	12 6.0	9.7		9.5	35.2	44.3		8.9	11.4	55.0		9.5	47.1	52.3	
9.5	48.0	36.3		9.0	8.2	39.2		9.1	21 4.3	4.7		9.5	20.5	25.6		9.3	58.9	44.6	
9.1	57.8	44.1		8.5	22.1	9.1	K	9.5	5.6	37.6	*B*	9.5	23.0	22.5		9.0	39 13.1	58.0	
8.4	3 3.1	59.1	K	9.1	28.5	1.4	B	9.5	9.0	52.6		9.5	49.6	5.7		9.5	19.0	18.5	
9.5	8.1	57.2		8.8	34.3	34.8		9.4	9.1	40.5		9.5	54.0	22.5		9.3	37.6	3.1	
9.5	43.1	56.8		9.0	48.3	10.5	B	8.1	15.5	30.0	K	9.5	56.0	32.0		9.5	44.4	47.4	
9.3	46.6	47.0	K	9.5	52.5	53.2		9.5	24.1	54.5		9.1	32 19.2	38.4		9.5	49.9	25.1	
8.3	48.7	51.3	K	9.5	56.7	5.6	*B*	9.5	36.8	28.9		9.1	23.7	25.0		9.0	59.4	51.0	
9.1	4 6.5	58.9	K	8.0	57.7	59.7	K	9.1	22 10.9	42.0		7.7	26.4	15.3	L	8.8	40 2.8	9.1	K
9.2	7.0	27.9		8.3	13 2.2	14.0	K	9.3	12.2	33.4		9.5	32.6	1.7		9.0	23.1	11.5	K
9.0	22.7	4.6		9.4	9.3	1.9	B	9.5	36.0	20.2		9.0	42.5	36.2	B	9.4	35.3	40.2	
9.5	23.1	60.6		8.3	9.6	18.4	K	9.5	23 14.5	45.7		9.2	44.6	9.2		9.5	36.7	43.3	
9.5	23.3	36.3		9.5	17.5	0.9		9.5	27.6	37.3		9.5	33 8.5	40.1		9.4	45.9	30.8	
8.1	35.6	18.0	L	9.5	27.3	50.3		9.5	40.3	16.1	B	9.5	12.6	18.5		9.5	48.8	45.8	
9.4	5 4.3	48.0		9.4	46.3	27.1		9.5	41.4	17.5	B	9.5	15.9	48.6		9.0	48.9	50.3	
9.5	13.5	32.1		8.8	53.9	19.4	K	9.4	24 5.2	27.6	B	9.5	33.9	56.0		9.4	49.4	19.7	
9.5	16.6	15.1	S	9.5	56.7	45.2		9.5	54.3	50.5		9.5	36.6	0.5		6.7	58.9	9.9	K
8.4	18.0	18.6	L	8.0	59.8	9.6	K	9.3	25 9.9	16.6		9.2	38.9	12.7		7.7	41 1.9	40.0	K
9.5	18.6	6.5		9.5	14 3.8	33.3		9.5	22.9	34.2		9.2	49.4	51.0		8.0	9.5	30.1	L
9.0	24.3	3.7	L	9.5	17.0	5.4		8.8	34.1	15.5		9.3	52.2	41.7		9.5	31.1	54.4	
9.5	28.1	33.9		9.5	27.0	6.4		9.0	34.9	42.1		9.2	52.8	21.1		9.5	57.3	44.6	
9.3	28.4	36.2		9.5	30.7	37.7		8.5	45.3	35.6		9.3	58.2	40.3		9.5	42 3.4	60.5	
9.0	6 2.5	1.9	B	8.7	41.8	57.8	P	9.2	57.6	15.3		9.5	34 0.5	60.3		9.3	12.5	13.1	
9.5	3.2	30.9		8.8	43.4	30.5	K	9.3	26 3.1	56.5		9.5	7.1	10.6		9.5	14.2	46.1	
9.5	6.8	39.5		9.5	52.0	58.6		5.9	16.0	6.4	K	9.2	14.6	34.5		9.5	19.5	25.9	
8.5	18.5	47.0		8.5	56.3	25.4	K	9.5	19.5	26.5		8.8	19.5	46.0	K	8.0	24.2	10.5	L
8.5	28.5	2.0	K	9.0	59.0	43.1		8.5	37.1	53.7	K	9.3	21.9	12.7		9.5	27.2	24.1	
9.2	33.6	52.1		8.8	15 1.7	37.6		9.4	38.5	24.2		9.5	42.7	37.7		9.0	36.8	57.2	
9.0	56.2	35.4		9.0	30.7	26.0		9.3	39.0	59.1	*a*B	9.4	51.5	7.4		9.5	38.1	36.4	
9.5	7 24.4	1.2	B	9.5	36.5	0.7		9.4	39.9	14.6		9.5	58.9	52.4		9.5	39.8	60.3	
8.3	27.8	40.3	K	9.5	37.5	28.7		9.5	45.4	2.1		9.5	35 9.4	59.4		9.5	43.9	4.4	
10pr.	+ 30.37	− 0.04		*10pr.*	+ 30.37	− 0.18		*10pr.*	+ 30.37	− 0.30		*10pr.*	+ 30.37	− 0.45		*10pr.*	+ 30.37	− 0.56	

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ		−1°			6ᵐ		−1°			6ᵐ—7ᵐ		−1°			7ᵐ		−1°			7ᵐ		−1°	
m					m					m					m					m				
9.5	42	47.8	43.3		9.5	48	52.5	60.2		9.5	56	19.1	37.7		9.4	3	45.7	32.1	B	8.7	10	25.4	17.0	L
9.0		52.1	33.8		9.5		53.5	11.9		9.3		27.6	56.3		9.4		47.2	52.2		9.0		28.9	35.0	
9.5	43	0.5	14.8		9.5		56.5	3.5		9.5		42.9	30.6		9.2		52.4	54.5		9.5		30.0	26.0	
9.3		3.4	4.1		9.3	49	4.4	59.5	K	9.5		47.3	32.0		8.9		59.4	23.6	B	8.7		31.5	43.7	K
9.3		11.8	36.9		9.5		5.2	22.4		8.5		55.3	53.5	K	9.2	4	12.0	42.9		9.3		42.0	39.4	
9.1		23.2	21.1		9.5		6.2	26.3		9.5	57	2.3	58.1		8.7		12.6	7.1		9.3		42.8	53.7	
9.5		37.2	39.1		9.5		16.5	55.3		9.5		7.8	28.0		8.8		13.8	46.9		9.5		44.8	53.7	
9.5		42.9	12.0		9.3		29.9	3.1		9.2		7.8	22.4		9.5		19.0	27.7		9.5	11	4.2	12.1	
8.5	44	1.3	47.8		9.5		30.9	8.6		9.3		9.6	31.8	B	9.2		23.7	32.0		9.5		30.9	32.7	
9.2		4.1	9.8		9.0		40.6	50.5		9.2		10.7	34.5		9.5		34.7	8.7		8.8		31.0	8.6	
9.4		5.2	34.8		9.3		40.9	34.2		9.2		10.8	42.0		9.4		42.5	25.1	B	9.4		39.4	57.1	α
9.3		11.6	11.3		9.0	50	1.0	6.0	B	9.5		22.7	23.9		8.8		45.0	1.9		9.0		46.0	45.8	
8.9		19.0	29.3		8.8		6.4	11.4	L	8.6		24.5	27.5	K	8.8		45.1	12.7		8.3		50.0	23.2	L
9.0		38.4	28.8		9.5		16.2	54.3		8.9		27.9	36.1	K	9.5		52.4	48.6		9.3		50.9	56.4	α
9.0		38.4	57.6	K	9.4		35.0	38.2	B	9.0		38.9	34.1		9.4		52.9	19.6	α	9.5		58.7	60.9	
9.4		39.7	7.1		9.3		40.3	36.3		9.5		45.1	23.7		9.5		57.5	11.2		9.1	12	26.9	43.6	
9.5		49.5	37.2		9.5		47.5	27.2		9.3		48.4	29.7		8.7		58.5	32.8		9.5		26.9	53.1	
9.3		51.3	22.5		9.5	51	7.3	56.1		9.5		54.7	8.9		9.5	5	9.4	36.3		8.7		29.7	9.0	
9.5		56.6	32.5		9.5		9.2	1.0	B	8.8		58.7	21.4		9.4		22.2	57.2	B	8.5		30.3	2.6	
9.3		59.3	14.1	α	8.9		12.1	25.3		9.5	58	4.9	57.1		9.5		45.0	26.7	B	9.4		34.0	54.9	
9.0	45	3.3	13.8		9.5		12.6	31.0		8.8		11.5	60.0		9.2		52.2	1.8		9.5	13	5.1	50.4	
9.4		3.3	40.0	B	8.7		29.3	38.2	K	8.8		22.4	17.8	K	9.5		59.4	29.9		9.0		9.4	27.9	
9.1		24.7	47.7	K	9.2		32.3	10.8		9.5		30.2	55.8		9.0	6	15.0	50.4	K	8.2		14.9	19.8	B
9.0		26.4	32.6	B	9.5		48.7	33.4	B	9.3		33.1	14.3		9.5		20.0	15.8		9.5		21.0	16.7	
9.3		27.1	52.5	B	9.0		54.2	21.2	K	9.5		38.0	49.5		9.5		24.4	46.5		9.5		33.3	3.1	
9.5		39.2	56.6		9.5		56.9	5.6		9.2		41.4	5.3	K	9.4		36.0	30.4		9.3		48.5	32.6	
9.5		39.6	5.9		9.5		59.3	9.8		9.2		42.9	20.0		9.5		39.0	19.4		9.5		49.1	60.3	B
9.2		41.1	43.0	K	9.5	52	22.0	49.5	B	8.8		49.2	39.3	K	9.3		46.4	28.1		8.7		50.2	36.7	
9.3		48.5	24.7	B	9.3		25.3	6.0		9.5		49.9	43.1		9.5		59.4	41.4		9.5	14	0.0	43.4	
9.4		57.0	18.3	B	9.3		33.4	49.4	αB	9.5	59	3.5	20.8		8.5	7	7.8	31.8	K	9.5		3.1	5.4	B
9.5		57.4	5.9		9.0		33.5	48.7	B	9.2		7.0	26.6		9.0		9.2	16.0		9.5		3.9	14.7	
9.5		58.0	17.8		9.5		37.9	8.3		9.5		8.5	13.6		8.2		29.7	7.5	K	9.4		3.9	60.0	B
9.5	46	0.3	46.6	B	9.4		42.1	50.8	K	9.5		22.6	30.3	B	8.7		38.9	51.0		9.2		4.4	12.7	
9.5		4.4	17.1		8.9		42.6	54.8	K	9.0		35.2	20.1	K	9.5		40.5	30.4		9.5		7.7	61.0	
9.5		6.4	2.8		9.1		59.6	23.4	K	9.5		40.3	28.8		9.5	8	3.7	10.7	B	9.5		14.9	37.3	
9.5		9.6	29.4		9.5	53	5.4	25.0		9.4		58.0	10.3	B	9.5		4.2	11.4		9.5		47.6	8.3	
9.5		42.2	14.0		9.5		5.5	29.3		8.5	0	2.0	19.1	K	8.8		4.3	42.3		9.0		53.8	36.1	
9.2		42.6	48.3		9.5		7.5	19.0		9.4		2.1	38.6	B	8.0		14.7	36.3	K	9.5	15	3.0	23.1	
9.3		46.8	26.8		9.4		15.1	5.9		8.6		4.3	36.5	K	9.2		21.4	41.9	α	9.3		14.1	33.4	B
8.8		48.5	38.0		9.3		17.2	40.3		9.3		30.5	21.3		9.5		36.4	55.4		9.5		17.0	58.9	
9.5		59.9	56.2		9.2		34.8	20.0		9.3		33.3	54.0		9.2		44.8	27.8		9.5		18.9	18.1	
9.0	47	1.3	28.6		9.5		39.8	31.0		9.5		41.9	32.0		9.4		46.8	60.1	B	9.5		20.1	41.1	
9.0		5.0	27.9		9.5		51.9	57.1		9.0		59.7	4.9		9.2		47.4	47.4		9.5		27.0	52.4	
9.5		9.2	56.4		9.0		57.8	57.4		9.5	1	23.8	29.7		9.4		52.2	60.1	B	9.5		35.0	2.0	
9.3		22.0	56.8		9.2	54	3.5	48.0		8.5		26.6	33.5	K	9.5		52.5	59.0		9.3		39.5	7.2	
6.7		22.3	34.9	L	9.5		6.6	57.4	α	9.3		31.0	2.0		9.2	9	18.7	50.3		9.5		47.5	16.9	
8.5		27.7	6.6	B	9.5		12.5	7.3		9.3		38.1	44.0	B	9.5		23.4	32.8	B	9.5		55.4	58.3	
9.2		28.9	33.7	αB	9.5		22.0	23.9		9.4		42.0	41.3	B	8.6		26.4	22.8	K	9.4		57.6	30.5	
8.5		32.3	12.1	L	7.2		32.3	8.0	L	9.3		54.7	43.6		9.5		29.0	16.9		9.0	16	16.7	50.4	K
9.3		36.9	57.7		9.5		33.4	12.0	B	9.2		59.0	41.3	B	9.5		37.9	54.7		9.2		21.7	58.2	B
9.2		36.9	22.3	B	8.7	55	2.6	47.9	K	8.6	2	12.3	8.0	K	9.3		40.5	18.7		9.0		22.3	33.6	
9.3		41.1	29.5	B	9.0		8.2	26.8		9.4		25.7	59.4		8.3		40.7	20.4	K	9.0		22.8	47.5	K
9.3		51.3	37.3		9.3		25.8	36.9		9.5		28.4	56.8		9.5		48.6	37.1		9.2		24.2	57.2	α
9.5		54.8	19.3		9.0		33.3	59.8	K	8.7		48.8	38.5		9.5		49.8	7.0	B	9.0		25.4	12.9	
9.5	48	12.2	3.3		9.5		33.5	22.8		9.4	3	12.5	30.6		8.7		58.9	32.0	K	8.9		48.2	11.7	B
9.3		18.4	21.2	B	8.7		38.4	49.9	K	9.5		12.7	57.1		9.3	10	0.7	44.4	α	9.4	17	12.2	44.4	
9.5		25.3	60.2		8.7		59.5	50.8	B	9.2		16.1	40.9		9.3		3.0	26.3	B	9.5		27.4	49.1	K
9.3		29.4	4.5		9.5	56	4.8	21.4		9.3		19.4	2.7		9.5		4.4	4.2		8.9		32.0	28.6	
7.9		33.5	24.1	L	9.5		8.9	12.5		8.2		20.0	36.5	L	9.3		11.2	51.7		9.5		34.4	45.1	
9.5		35.2	35.3		9.3		17.8	40.7		9.5		38.8	45.9	B	9.3		21.4	36.4		9.3		37.9	58.8	
10pr.		+ 30.37	− 0.67		10pr.		+ 30.38	− 0.77		10pr.		+ 30.38	− 0.86		10pr.		+ 30.38	− 0.96		10pr.		+ 30.39	− 1.06	

1701 — 1760					1761 — 1820					1821 — 1880					1881 — 1940					1941 — 2000				
	7ʰ		−1°			7ʰ		−1°			7ʰ		−1°			7ʰ		−1°			7ʰ—8ʰ		−1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	18	9.0	42.3	B	9.5	26	28.1	7.7		9.5	36	46.7	4.3		9.5	47	5.7	16.7	B	9.0	57	29.9	37.5	
9.5		9.0	60.6		9.5		30.7	52.4		9.5		49.1	23.5		*9.3		11.1	29.5	B	9.5		38.9	9.4	
9.3		15.0	57.0		9.5		31.5	47.7		9.3		51.0	21.0	B	7.8		16.3	2.6	K	9.5		48.3	19.5	B
9.1		21.6	36.4	K	9.0		43.1	1.9	K	9.4		57.9	60.2		9.5		24.0	41.4	B	9.4		53.8	12.6	B
9.5		29.4	17.0		8.2		58.8	0.4	K	9.5	37	1.6	25.1		8.8		29.2	26.9	K	9.5		59.2	40.7	
9.5		29.7	21.8		9.5	27	4.2	43.7		9.5		20.0	19.2		8.8		38.4	21.4	K	9.3	58	6.4	50.0	
7.7		39.4	57.0	K	9.5		37.7	17.4		9.5		20.9	33.2		8.8		46.2	52.2	K	9.3		6.9	59.7	
9.5		53.2	18.1		8.8		41.4	61.9	K	9.0		39.5	60.8	B	9.5		50.8	7.4	B	9.5		28.9	12.9	a
9.4	19	8.4	58.1	aB	9.5		45.4	59.4		9.0	38	3.4	18.0	K	9.5	48	11.0	2.6	B	9.0		31.6	18.5	
9.5		14.4	24.5		9.5		58.9	28.6		9.1		13.9	45.9		8.2		13.9	49.0	K	9.5		31.7	42.7	
8.7		15.7	53.8	K	9.1	28	25.9	16.9		9.4		20.3	51.3	B	9.5		22.9	44.8		9.5		45.9	51.2	
9.5		24.3	59.5	B	9.5		38.4	29.3		9.5		26.9	23.1		9.0		45.4	30.3		9.5		52.9	26.5	
9.3		24.9	10.8		9.4		51.5	1.5	B	9.3		35.9	5.7		9.3		46.4	22.7		9.5		59.9	2.3	
9.0		29.1	16.8		9.0	29	9.4	34.8	K	9.5	39	6.1	50.1		9.5		47.4	55.6		9.0	59	7.7	53.9	K
9.5		32.2	36.0		9.3		25.9	49.0		9.5		41.4	33.3	B	9.5		55.9	5.4		7.8		7.9	59.1	K
9.0		36.2	49.2	K	9.3		28.9	20.2	a	9.5		42.3	12.3		9.4	49	4.4	21.3		9.5		28.5	46.6	
9.0		36.7	19.5	K	9.5		33.9	35.8		9.5	40	12.4	28.3		9.4		14.4	52.1		8.0		30.7	13.3	K
8.9		36.8	10.0	B	9.0	30	0.7	27.5		9.0		15.4	54.2		9.5		34.4	6.0		9.5		47.4	4.0	
9.3		40.7	4.5		8.0		9.1	42.7	B	9.5		38.4	27.2		9.5		56.9	43.4		9.5	0	15.4	21.0	
9.5		47.6	19.7	B	8.5		13.3	1.4	K	9.5	41	7.4	16.4		8.3	50	3.4	13.3	B	9.5		28.6	3.0	
9.5		51.3	25.4	B	9.3		19.6	8.7		9.0		32.4	34.4		9.5		31.0	37.6		9.4	1	10.9	45.3	
9.5	20	6.6	1.5		9.3		28.0	15.2	B	8.7		53.9	18.8	K	9.3		37.6	43.2		9.0		11.4	16 5	
9.4		10.5	24.8	B	9.5		34.4	23.6	K	9.0	42	1.4	27.9	K	9.0		37.6	15.5		9.3		13.6	39.7	B
9.3		22.3	17.5	K	9.3		52.4	35.8		9.5		17.2	25.8		9.5		58.4	39.0		8.8		39.9	23.0	K
9.5		25.6	49.3		9.5		59.4	37.6		8.5		30.9	41.8	B	9.0	51	9.9	54.2	K	9.0		42.2	12.0	
9.0		38.2	21.5	K	9.5	31	18.4	4.3		9.0		37.5	4.6	K	9.1		21.4	29.0		9.5		45.9	47.6	a
8.7		45.7	21.2	K	8.2		22.4	5.7	K	9.0		38.5	56.0		9.0		30.9	13.4	K	9.5		57.2	15.8	aB
9.3		57.7	33.7		9.3		27.9	6.0	K	8.0		46.4	18.9	K	9.4		46.4	48.7		8.8	2	1.9	13.7	K
9.5	21	14.7	21.8		9.5		56.7	23.4		8.2		53.1	5.3	K	9.5		46.9	1.9		9.0		15.9	45.9	
9.2		28.6	40.3	B	9.5	32	1.4	16.8		9.5		53.2	47.6		9.5		58.4	49.3		9.4		22.8	29.5	
9.0		32.6	24.2	K	9.5		12.9	41.8		9.5		53.4	53.9		9.3	52	12.3	57.6	B	9.5		23.8	25.0	
9.0		42.6	31.7	K	9.3		25.9	11.0	a	9.5	43	8.4	35.5		9.4		12.4	40.0		9.2		28.9	46.6	
9.4		51.5	54.1	B	8.0		40.9	33.1	K	8.5		13.4	14.1	K	9.3		25.9	48.0		9.5	3	12.9	60.8	
9.3		52.8	0.8		9.0		43.9	5.0		*9.3		15.4	16.2		9.3		30.9	3.0		9.4		44.6	48.2	aB
9.3		53.9	44.2		9.0		44.4	11.4		8.7		28.4	0.4	K	9.0		36.4	19.5		9.4		47.5	51.7	B
9.0		55.2	31.4	K	9.3		45.4	23.6		~~9.6~~		~~29.2~~	~~57.3~~		8.0		38.4	23.8	B	8.0		51.9	8.5	L
9.5		56.6	43.1		8.5	33	10.7	30.2	K	9.5		37.5	7.7		9.5		45.5	5.4	B	9.5	4	11.4	45.9	
6.5		59.7	36.5	K	9.0		41.7	5.4	K	9.3		40.2	28.3		9.3	53	6.4	55.6	a	9.5		28.2	5.8	
9.5	22	20.4	24.8	B	9.5		51.7	30.0		9.5		51.7	11.2	B	9.5		26.4	36.9		9.5		51.9	14.8	
8.8		32.4	13.3		9.5		51.7	37.9		8.5	44	0.0	43.1	K	9.0		32.9	43.8		9.1		33.4	45.0	
9.5		37.9	42.8		8.5		56.9	12.7	K	9.5		5.3	14.1		9.5	54	8.9	16.8		9.2	5	6.7	20.8	
9.5		57.4	31.0		9.3	34	5.9	56.3	a	9.5		21.5	0.4		9.5		9.3	52.1	B	9.0		9.9	32.2	
9.5	23	18.9	37.6		9.5		20.4	8.1		9.4		25.9	14.7	B	9.4		11.4	59.2	aB	9.1		11.9	9.0	
9.3		22.8	29.0		9.5		37.4	21.3		9.5		33.2	3.4	B	9.5		27.9	32.4		9.3		25.7	50.7	B
8.2		40.9	51.8	K	9.5		43.4	5.8		9.5		34.4	17.2		9.3		40.4	24.7		9.3		48.0	54.7	
9.5	24	0.6	5.7		9.5		45.1	35.1		9.5		36.9	40.4		8.6		44.3	53.1	K	9.5		50.2	37.6	
9.5		3.2	29.3		9.5		54.5	44.4		9.5		50.8	42.5		9.5		45.5	43.5		9.5		52.4	34.5	
9.5		3.9	33.5		9.0	35	6.4	36.5	K	9.1	45	18.4	45.6		8.0	55	20.9	59.8	K	8.6		59.6	0.2	K
9.1		34.0	57.3		9.5		13.7	22.7		8.8		20.7	24.1		9.0		23.7	27.2		9.3	6	30.7	46.4	
9.3		34.0	2.5	K	9.3		14.4	43.2		8.5		20.9	53.8		9.5		38.4	14.0		8.8	7	4.7	1.0	K
9.5		46.5	4.4		9.0		17.4	48.7	K	9.5		25.9	54.8		9.0		45.9	43.5		9.3		14.8	15.2	
9.5		52.2	19.0		9.4		22.8	14.4	B	8.5		37.4	37.8		9.5		50.7	14.4		8.8		18.2	31.1	
9.3	25	12.9	27.9		9.4		51.8	2.2		8.3		37.6	3.9	L	9.5	56	12.7	33.4		9.5		35.8	26.7	
9.0		15.4	51.9	K	9.0	36	1.9	10.2		9.5		48.4	7.0		9.0		13.9	38.3		8.8		39.7	33.9	K
8.8		28.4	30.4	K	9.4		13.5	27.6	B	8.8	46	8.6	52.8	K	9.0		27.9	36.9		9.3	8	13.8	17.6	
7.7		31.2	44.0	K	8.2		15.4	0.8	K	9.3		17.9	12.3		9.4		28.3	13.7	B	9.0		30.2	10.1	K
9.4		31.7	22.0		9.3		16.9	42.2		9.5		29.4	39.6	B	9.5		53.2	6.4		9.5	9	17.2	34.7	
8.8		56.7	18.5	K	9.0		19.4	52.2		9.0		40.9	59.3		9.5		53.9	45.2		9.5		23.0	23.2	B
9.5	26	12.5	41.1		9.3		30.8	0.8	K	9.0		43.4	32.3		8.5		54.7	26.8	L	9.5		25.3	20.3	
9.5		16.0	44.0		9.4		37.9	28.9		9.2		44.5	45.3		8.0	57	6.4	11.3	L	9.5		41.2	59.2	
10pr.		*30.39*	*1.16*		*10pr.*		*30.40*	*1.29*		*10pr.*		*30.40*	*1.45*		*10pr.*		*30.41*	*1.57*		*10pr.*		*30.42*	*1.70*	

1854ᵃ				
9.5	*43*	*27.9*	*8.2*	*B*

1881ᵃ				
9.5	*47*	*7.7*	*16.4*	*B*

2001 — 2060					2061 — 2120					2121 — 2180					2181 — 2240					2241 — 2300				
	8ᵘ		−1°			8ᵘ		−1°			8ᵘ		−1°			8ᵘ—9ᵘ		−1°			9ᵘ		−1°	
m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′	
8.5	9	57.8	23.8	K	9.4	23	54.0	42.8	B	9.5	36	46.1	45.9		7.8	53	56.2	59.5	K	9.0	12	36.4	31.5	L
9.5	10	20.0	7.6	B	9.3	24	0.2	8.0		8.8	37	11.5	51.8		9.2		58.9	41.2	B	9.0		43.5	22.5	K
8.8		20.7	55.3		9.5		3.8	16.3		9.3		31.3	5.1		8.5	54	3.2	57.0	K	9.1	13	13.9	12.6	
9.2		23.2	48.1	K	9.3		47.8	29.8		9.0		35.7	46.6		9.5		6.5	52.4		9.5	14	8.4	49.2	a
7.8		31.7	20.0	K	9.5	25	6.2	35.0		7.0	38	42.2	31.0	K	9.1		10.3	7.5		9.5		10.7	37.0	
9.5		52.0	11.3	B	9.3		36.8	38.8		8.8		50.0	45.2		9.2		20.6	41.2	B	9.1		39.9	8.0	
9.0	11	24.8	26.3		9.5	26	6.2	14.5		9.3		50.0	18.8		9.3		55.5	43.3		9.1		43.5	29.7	
9.5		43.8	45.3		8.6		9.2	24.6		9.0	39	0.0	31.0		7.8	55	4.5	48.5	K	9.5	15	10.4	35.7	
9.0		45.0	37.0		9.1		10.1	21.5	B	9.5		32.0	23.6		8.7		9.4	14.2		9.0		15.0	56.9	
9.5		59.2	16.6		8.8		10.5	19.1		6.0		55.5	22.2	K	9.5		15.0	8.0		9.5		45.0	58.7	B
8.8	12	55.2	8.0		9.5		17.2	12.5		9.2	40	0.3	6.2		9.3		50.0	0.4		9.4		54.6	61.0	B
9.5	13	5.6	39.8	B	9.2		20.8	11.5		9.4		23.0	31.6	B	8.5	56	16.9	49.3	L	9.5	16	25.5	27.7	
9.3		20.2	26.0		9.4		35.8	19.4		9.5		30.6	33.1		8.2	57	20.0	54.4	K	9.5		54.4	25.3	
9.5		28.7	49.0		6.5		41.8	39.4	K	9.4		31.0	15.4	B	8.7		27.5	37.8	K	9.5	17	27.0	54.1	
9.5		35.8	55.4	B	8.2		42.7	5.1	K	9.5		48.2	17.4	B	9.5		31.4	44.8		9.5		39.5	11.7	
9.5		48.5	52.2		9.5	27	1.5	37.8		8.2	41	8.4	58.2	L	8.8		40.6	5.0	K	9.5		48.4	2.0	
7.0		59.3	8.3	K	9.5		9.2	36.3		9.0		32.0	33.2		9.5		53.5	18.8		9.1	18	10.2	23.9	
9.0	14	12.2	31.5		9.0		19.4	39.8	B	9.0		49.0	52.0		9.5	58	0.3	22.3		9.2		35.8	11.1	
9.5		19.3	27.4		9.5		29.0	50.3		9.0	42	12.4	15.6	K	9.4		16.9	21.8	B	9.5	19	23.5	37.5	
9.0		29.2	27.8		9.4		34.5	40.8	B	9.0		27.6	8.3	K	9.5		18.4	37.5		8.5		27.3	8.0	K
9.0		30.5	10.4		9.3		41.0	31.0		9.5		56.5	37.2		9.5		28.0	2.0		8.5		29.9	53.1	K
9.3		37.7	40.9		9.5		49.0	34.1		9.5	43	8.0	13.2		9.0	59	6.9	10.9	K	9.5	20	30.0	17.6	
9.5	15	5.9	37.7	B	9.4		53.4	27.2	B	9.3		24.5	21.9		9.5		8.7	52.8		9.4		32.7	41.7	B
9.0		10.2	27.7		8.5	28	44.9	11.6	K	9.2		35.9	6.9		9.5		36.7	24.2		9.5		49.3	51.7	B
9.5		10.6	57.4	B	9.2		49.3	3.3		9.2		52.2	8.0		9.3		37.0	43.7		9.0		58.9	29.1	
9.0	16	11.3	38.4		9.3	29	1.4	15.3		9.5	44	0.5	24.8	B	9.5	0	19.8	42.3		9.4	21	15.5	55.0	
9.5		19.8	0.4		9.5		15.4	28.5		8.7		1.0	2.9		7.0		41.4	54.1	K	9.5		37.5	7.1	B
7.0		34.8	3.2	K	9.0		54.5	32.0		9.4		23.4	13.7	B	8.8		57.0	5.0	K	6.7	22	3.8	34.5	L
9.5		48.8	50.9		9.5		54.9	30.6		9.3		31.0	38.9		8.0	1	45.9	0.4	K	9.2		11.2	51.1	
8.8		58.2	57.3	K	8.3	30	24.6	5.1	K	9.5	45	48.4	10.7		9.5		52.6	38.1	B	9.4	23	15.6	54.8	
9.0	17	14.7	50.2		9.4		37.0	10.3	B	9 3		48.5	41.0		9.4	2	6.5	41.4		9.5		43.3	33.0	
8.8		17.0	30.2		8.0		51.4	22.3	K	9.5	46	8.9	20.3	B	9.3		36.5	45.2		9.5		51.4	46.4	
9.5		36.8	10.7		9.3	31	34.0	38.3		9.5		15.2	26.3		9.0	3	24.4	46.4	K	9.0	25	9.3	11.5	K
9.3		44.7	17.0		9.5		40.0	26.1		8.8		50.0	55.6	K	9.3		25.7	15.3	B	8.8		36.6	39.8	K
9.0		47.8	38.1	K	9.5		48.7	59.1		9.3		53.8	57.7	B	9.5		35.9	13.7		9.0		53.4	40.7	K
8.8	18	9.8	37.8	K	9.3	32	11.1	27.1		9.3		56.0	15.7		9.3		51.5	55.9	a	8.9	26	19.1	55.1	K
9.5		30.3	10.4		9.5		22.6	24.6	B	9.0	47	17.5	22.1		9.0	4	30.0	37.8	K	9.3		22.2	6.0	
8.8	19	28.0	26.7		9.0		25.1	32.7	B	9.0		37.0	18.1		9.5	5	23.9	28.7		9.4		44.8	0.2	
9.5		28.7	5.2		8.9		34.0	22.6		8.8		43.6	10.1	K	9.5		57.0	42.6		9.2	27	11.6	53.3	B
9.5		31.8	44.0		9.0		36.0	17.4	K	9.5	48	12.0	1.0		9.5	6	0.5	29.1		9.0		11.7	23.7	
9.4		34.6	7.2	B	9.3		43.0	48.0		8.8		19.5	27.1	K	9.1		11.6	47.9	B	8.7		57.6	29.5	
9.3		41.2	10.0	B	8.5		59.0	5.4	K	8.8		50.0	37.5		9.5		23.3	54.4		9.3	28	4.5	8.6	K
9.5		48.2	37.0		8.8	33	15.9	58.4		8.5	49	19.4	49.3	K	9.5		27.9	41.6		9.5	29	33.0	54.0	
9.5	20	5.8	56.8	a	8.9		25.4	50.1		9.5		34.7	4.6	B	8.8		36.4	29.7		8.8		48.3	15.8	K
9.5		10.2	32.2		9.5		37.0	18.7		9.4	50	1.5	56.7		9.5		58.0	42.3		9.3	30	56.8	31.0	
8.8		19.2	58.5		9.5		42.6	3.9		9.5		37.0	46.3		9.3	7	8.0	0.6		9.0	31	31.4	27.1	
9.4		24.6	29.1	B	8.7		43.2	29.2	K	9.3	51	8.4	35.4		9.5		21.9	37.0		9.5		37.0	14.0	
9.5		26.1	24.3		9.5		48.0	40.6		9.5		25.0	36.1		9.0		52.5	45.4		9.5	32	19.0	45.0	
9.5	21	9.2	45.7		9.5	34	4.4	16.3		9.0		40.0	39.6		9.4	8	4.0	14.9	K	9.2		53.6	53.5	
9.3		39.3	52.3		8.8		7.4	0.7		9.3		46.4	1.7		9.0		42.0	13.8		8.5	33	10.0	3.3	K
9.3		40.5	42.3		9.0		14.5	25.0		9.5		49.9	53.8		9.3	9	14.6	34.1	a	9.5	34	7.5	9.8	
9.5		43.8	10.7		9.5		22.4	28.8		9.1	52	17.6	2.9	K	9.4		17.0	3.2		9.0		34.4	5.3	K
9.5	22	6.8	10.7		9.5		33.5	4.6		8.8		28.4	1.0	K	9.0		19.5	31.2	K	9.5		49.8	57.0	
9.5		15.8	26.0		9.3		35.2	18.1		8.0		39.5	59.4	K	9.3		58.4	57.9	a	8.7	35	29.7	34.8	K
9.5		20.8	38.8		9.5	35	29.4	18.8		9.5		45.2	10.6	B	9.5	10	2.9	5.9		9.0		36.3	17.2	K
9.2		20.9	53.8	aB	9.5		44.0	46.5		9.5	53	26.6	27.0	B	9.5		37.5	55.2		9.2		47.4	60.1	
9.0		30.8	16.0		9.5	36	11.5	39.3		9.3		27.2	23.8		9.0	11	0.0	22.9		9.0	36	48.3	20.7	
7.8		58.2	52.7	K	9.5		35.5	36.2		9.2		35.4	31.9	B	9.3		18.4	56.2		9.5	37	32.4	42.0	B
9.5	23	20.2	37.8		8.7		40.0	44.5	K	9.3		47.1	4.1	B	9.3		27.6	6.9		8.0	38	25.6	14.3	L
8.3		51.7	29.8	K	9.5		45.5	41.6		9.5		52.3	2.3		7.3		47.9	49.6	K	8.3		43.4	55.6	L
10pr.		+30.43	−1.88		10pr.		+30.44	−2.04		10pr.		+30.46	−2.22		10pr.		+30.47	−2.38		10pr.		+30.50	−2.59	

2301—2360

	9ᵘ — 10ᵘ	—1°	
m	′ ″	′	
9.3	39 0.4	52.3	
8.3	27.1	13.6	
8.5	58.6	58.9	
9.5	41 42.5	30.7	
9.5	43.2	0.5	
8.8	42 35.6	56.0	
8.8	48.9	28.5	K
9.3	43 1.3	58.5	a
8.8	1.5	20.7	K
8.7	15.2	49.6	K
9.3	25.7	41.0	
8.9	36.0	20.7	L
9.4	48.1	29.5	
7.5	56.2	9.8	K
9.5	45 39.3	60.4	
9.2	55.0	53.2	
9.3	46 32.1	28.0	
9.3	47 8.5	4.9	B
8.3	12.2	56.5	K
9.3	48 1.8	25.0	
9.3	20.7	51.3	
9.5	34.4	36.2	
9.5	38.2	26.4	B
8.3	49 23.1	36.1	B
8.9	23.6	11.7	B
9.5	39.8	18.1	B
9.5	50 7.7	3.5	
*9.3	19.4	58.5	
7.3	21.6	15.4	K
8.7	26.3	15.7	K
9.5	56.0	55.8	
9.0	51 57.9	15.4	K
9.5	52 26.8	2.1	
9.5	46.9	48.8	
9.5	53.1	23.5	
9.3	54 13.5	44.4	
9.0	19.0	17.1	K
*8.7	30.7	34.6	K
*9.4	35.5	32.2	B
8.7	55 4.9	26.4	K
8.8	57 13.5	60.5	
9.5	58 36.4	39.3	
9.5	50.9	56.0	
9.0	59 11.3	6.8	K
9.5	12.4	38.1	
8.5	23.2	41.2	K
8.4	31.0	0.8	K
9.5	0 4.9	1.1	
9.5	16.0	45.7	
9.4	31.8	35.4	
9.3	34.9	24.8	
8.6	36.7	49.8	K
9.3	42.8	32.6	
9.2	1 9.2	34.2	
9.5	52.6	42.6	
7.8	3 39.9	42.8	K
9.5	45.8	48.2	
8.8	48.0	16.1	K
8.6	4 10.6	1.0	K
9.5	5 57.5	18.3	
10pr.	+ 30.54	— 2.82	

2361—2420

	10ᵘ	—1°	
m	′ ″	′	
9.5	7 9.5	15.2	
9.5	25.3	8.6	
9.5	8 6.3	38.0	
9.5	6.8	34.5	B
8.3	28.1	18.0	K
8.7	31.4	42.0	
9.3	42.3	27.7	
9.5	46.2	38.7	
8.2	9 13.8	53.3	K
9.5	38.8	39.7	
9.5	10 21.3	51.9	
9.0	36.9	58.6	
9.2	38.3	12.1	
9.3	12 5.4	43.2	
9.5	6.3	39.8	
9.3	23.0	58.8	
9.2	33.4	0.9	
8.9	41.8	32.5	B
9.0	58.5	57.7	
9.5	14 21.6	57.7	a
*9.4	15 43.0	45.7	B
7.8	16 26.7	32.7	L
8.5	17 13.4	53.2	K
8.8	25.9	16.5	K
9.0	26.7	38.3	
8.7	18 5.7	45.2	K
9.3	35.2	4.7	
9.0	39.2	36.4	
9.5	19 1.3	10.7	
9.1	3.8	36.1	aB
*8.5	20 35.0	58.6	K
9.5	21 45.0	22.5	
9.4	48.5	18.3	
9.5	56.4	7.9	
5.0	22 7.7	60.0	K
8.5	40.0	27.9	K
9.3	23 1.7	39.5	
8.7	41.0	47.9	K
8.8	24 1.6	41.4	K
9.5	4.0	1.2	
8.7	31.9	39.8	K
9.5	36.8	8.3	
8.5	44.8	54.3	K
8.9	45.0	25.8	
9.2	48.0	10.7	
9.3	25 58.0	45.7	
9.4	26 0.4	53.3	a
8.7	21.9	43.4	K
8.9	28 29.4	25.2	
8.7	29.5	17.9	K
8.5	59.4	1.6	K
9.5	29 18.7	38.2	
9.0	30 2.5	37.3	
8.8	43.5	30.1	
8.7	47.5	13.2	K
9.3	49.8	4.1	
8.2	31 9.8	17.8	K
9.0	17.1	45.2	L
8.8	32 13.2	35.5	K
9.5	39.8	36.4	
10pr.	+ 30.57	— 3.02	

2421—2480

	10ᵘ	—1°	
m	′ ″	′	
9.2	32 55.5	11.4	
9.0	33 17.8	26.3	
9.5	32.2	10.6	
9.5	34.8	32.4	
9.3	34 29.7	18.4	
9.5	33.1	8.0	
9.4	35 1.1	6.3	
9.4	3.4	21.4	a
9.0	9.6	46.5	
9.5	22.6	17.2	
7.5	25.1	25.2	K
9.2	47.0	33.2	
9.4	36 11.5	2.4	
8.8	37 6.2	34.4	
8.5	11.2	42.7	
9.2	34.1	29.4	
9.5	51.0	37.7	
9.5	38 10.3	53.4	
9.5	47.4	52.5	B
8.7	47.5	40.4	K
8.8	39 33.0	22.7	K
8.4	51.4	6.8	K
8.7	40 9.0	20.0	K
9.5	38.3	46.5	
9.2	41 9.9	2.8	K
6.5	17.3	12.4	K
9.5	45.1	4.1	
8.8	54.0	60.5	
9.5	42 11.2	39.0	
8.7	30.2	55.0	
8.5	32.5	11.2	K
9.0	43 7.5	54.8	
9.5	34.4	17.3	
8.5	44 19.9	49.5	K
8.7	20.6	42.4	K
9.5	45 4.4	34.3	
9.3	16.2	18.0	
9.0	46 2.7	29.7	K
6.7	3.1	28.8	K
5.7	21.5	21.8	K
9.5	49 5.3	13.5	
9.5	38.0	48.5	
9.5	50 24.4	49.4	
9.2	49.1	31.2	
8.2	51 26.3	27.6	K
9.0	51.7	28.8	K
8.5	52 27.0	13.1	K
9.5	53 13.9	13.4	
9.0	57.3	41.1	K
9.5	54 24.7	16.0	
5.2	26.6	42.1	K
9.3	55 2.2	2.2	
8.2	35.5	51.4	K
9.1	49.0	6.8	
9.5	56 21.4	23.2	
8.4	57 21.0	43.5	L
9.5	27.8	40.3	
9.1	39.6	2.2	
9.5	58 51.2	4.7	
9.4	53.7	35.6	B
10pr.	+ 30.60	— 3.16	

2481—2540

	10ᵘ — 11ᵘ	—1°	
m	′ ″	′	
9.4	59 15.4	35.4	B
9.5	22.2	31.1	B
9.5	23.8	51.5	
9.5	24.7	32.1	
9.4	59.6	42.3	B
8.4	0 3.1	23.7	B
9.5	46.7	1.4	
7.5	52.9	7.1	K
8.3	1 6.0	17.0	K
8.5	30.6	56.2	K
9.5	2 5.1	55.1	B
9.5	35.7	22.6	B
8.8	38.6	2.4	K
8.5	4 0.3	39.3	K
9.3	26.0	49.5	
9.5	5 35.7	50.1	
9.0	6 23.7	2.5	K
9.5	35.6	52.6	
8.5	7 1.7	37.9	K
9.5	/ 2.0	16.2	B
9.5	8 24.4	8.1	
8.7	24.9	30.6	K
9.5	9 11.0	7.1	
8.9	40.0	13.2	K
9.4	54.8	11.8	K
8.8	10 25.6	46.6	
9.5	11 13.6	39.8	
9.3	34.6	32.5	
9.1	12 5.8	10.8	B
8.6	13 0.4	0.8	K
9.5	55.2	17.7	
9.1	14 0.0	8.8	K
9.5	14.4	23.0	
9.1	26.1	29.7	
9.3	34.0	33.7	B
8.4	44.0	35.9	B
9.3	15 32.0	51.4	K
8.7	16 24.5	48.9	K
9.0	56.4	6.3	B
9.1	56.4	10.3	
7.2	17 34.5	24.5	K
9.4	47.9	37.2	B
9.5	51.0	34.2	
8.8	18 27.3	20.1	K
9.3	19 13.6	36.6	
9.5	42.3	16.0	
9.1	20 34.2	7.9	K
8.3	39.5	39.4	K
9.5	21 9.3	16.4	
9.3	35.2	3.4	
9.3	52.8	52.8	
8.9	22 25.6	14.0	
9.5	23 0.1	41.0	
9.5	20.1	47.3	B
9.3	55.0	30.4	
9.3	24 1.1	25.3	
9.4	53.8	17.8	B
9.5	25 19.6	49.7	
9.5	26 26.1	44.3	
7.8	27 23.5	41.2	K
10pr.	+ 30.68	— 3.27	

2541—2600

	11ᵘ	—1°	
m	′ ″	′	
8.2	27 28.5	25.7	K
8.7	28 11.9	48.8	K
9.5	14.2	39.1	
9.5	49.1	35.3	
9.2	29 32.5	54.5	aB
6.7	30 59.7	38.0	S
9.4	31 24.5	58.3	aB
9.2	29.9	58.5	aB
8.5	44.4	47.0	K
9.5	56.4	11.0	
8.9	32 4.7	55.1	K
9.5	19.6	15.3	
9.4	45.1	8.0	
9.0	33 4.8	39.6	
8.8	6.1	2.4	K
8.7	32.0	58.7	K
9.3	59.8	1.3	
9.5	34 0.1	48.5	
9.5	12.3	55.7	
9.5	35 12.6	38.0	
9.5	36 20.7	12.5	
9.0	25.7	32.7	
8.9	37 27.2	14.2	B
9.3	35.9	18.9	B
9.5	47.3	59.1	
9.5	59.2	20.5	
9.5	38 6.6	56.8	
9.4	34.1	39.2	
9.5	39 36.2	60.7	
9.4	40 18.3	51.6	B
9.4	23.2	56.4	B
9.0	42 9.5	56.1	
9.5	20.6	0.3	
9.5	25.2	43.3	
9.5	33.5	55.1	
8.0	43 2.0	36.9	K
9.3	23.0	58.6	a
9.5	42.9	12.4	
9.5	44 12.2	60.8	
9.2	14.1	2.3	
9.5	45 13.5	54.4	
9.5	46 12.2	12.3	
9.5	30.6	43.7	
9.5	36.1	0.4	B
9.5	54.4	21.2	
9.5	47 29.7	5.3	
8.7	30.0	34.7	K
9.0	50.2	44.7	
9.4	48 24.1	22.5	
9.5	59.4	8.3	
9.5	49 1.4	14.8	B
9.5	5.1	28.8	
9.5	5.5	6.8	
9.4	16.7	58.6	K
9.5	26.4	45.8	
9.5	50 11.6	32.4	
9.5	42.1	10.6	
[illegible]	51 25.8	20.4	
9.5	43.7	50.3	
7.7	52 9.4	7.0	K
10pr.	+ 30.69	— 3.33	

2327ᵃ				
9.6	50	14.6	48.4	B
2338ᵃ				
9.5	54	33.1	18.4	

2380ᵃ			
9.5	14	34.7	45.9
2.598ᵐ			
9.5	19	6.7	16.0

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	11°—12°		—1°			12°		—1°			12°—13°		—1°			13°		—1°			13°		—1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	52	24.4	4.8		9.5	17	22.7	15.2		8.9	37	12.9	54.0	K	8.5	3	30.7	57.4	K	9.3	28	28.4	48.8	B
9.5		26.9	37.9		9.0		31.1	32.6		9.5	38	4.9	45.6		9.5		53.4	37.7		8.7	29	6.4	46.7	K
9.4		36.1	26.0		9.3		42.4	22.5	K	9.5		6.9	29.1		9.4	4	52.7	43.9		9.4		19.2	8.7	B
9.5		36.7	48.9		9.0	18	2.1	20.5	K	9.5		56.8	25.3		8.0	5	18.4	30.0	L	8.5	30	24.8	21.6	K
9.5	53	29.7	54.8		9.5		46.4	19.0		9.5	39	35.9	16.5		9.0		28.4	26.5		9.4		58.0	1.7	B
9.0	54	1.0	25.0		8.8	19	0.6	4.8	K	9.5	41	35.8	51.7		8.0		48.7	47.4	L	9.0		58.1	50.2	K
9.5		5.8	57.2		9.5		1.7	28.1		9.5		45.9	34.6		9.0	6	25.1	15.4	K	8.0	31	27.1	47.3	K
9.5		19.1	52.8		9.5		34.7	59.1		9.3	42	15.6	29.7	R	9.0		30.1	39.3		9.0	32	45.1	38.0	
9.5		30.8	6.8		9.0	20	7.1	58.7		9.5		32.2	12.9		9.5		33.4	18.2		9.5		55.1	20.6	
9.0		32.1	26.0	K	8.0		20.7	34.6	K	9.2		49.4	24.3		8.8	7	25.1	15.4	K	9.5	35	3.4	17.5	
9.5	55	10.5	48.6		8.8	21	0.4	57.6	K	8.9		57.0	2.0	K	9.2		50.4	53.6	K	8.2		27.7	45.3	K
9.4		22.6	12.7		9.3		6.1	10.3		9.5	43	33.4	35.5		9.5	8	18.1	1.9		9.5		54.1	16.1	
8.0	56	7.6	38.5	K	9.5		19.3	4.2		9.5		45.8	51.0		9.5		23.7	18.9		9.5	37	31.0	26.1	
9.5	57	20.8	31.2	a	7.7		44.4	37.1	K	9.5	44	59.9	35.2		9.5	9	8.1	23.8		9.3	38	16.3	14.3	B
9.5		50.2	35.7		9.5		47.1	24.5		9.5	45	37.0	10.5		9.5	10	34.1	53.2		9.3		53.8	22.3	R
9.5	58	18.9	43.3		9.5	22	17.8	60.7		9.5	46	34.4	22.7		9.4		37.5	36.3	R	9.3		58.7	20.5	
9.4		23.1	17.7		8.5		53.4	8.3	K	9.0		59.9	21.7	K	9.5		51.4	30.4		9.5	39	1.7	4.2	
8.5		29.7	38.9	K	9.5		55.1	41.2		9.5	47	9.9	3.3		8.9	11	27.7	45.7	K	7.8		51.8	43.5	K
9.5		32.1	28.4		9.5	23	3.8	55.8		9.5		45.4	47.5		9.5	12	31.7	15.4		9.5	40	25.4	29.6	
9.4		39.1	21.2	B	9.5		25.7	36.7		9.5	48	2.4	12.3		9.5		58.4	21.7	R	8.7	41	49.7	12.3	K
9.5	59	56.7	50.3		9.5		36.4	43.7		9.5		7.0	25.9		9.5	13	30.4	22.0		9.5	43	3.4	43.5	
8.7	0	55.0	16.3	K	9.5		43.7	22.1		9.3		55.9	20.6		9.5	14	8.1	12.6		9.5		14.8	37.3	
9.5	2	13.4	11.5		9.1		44.0	16.2	K	9.3		58.4	15.7		9.5		31.1	1.4	R	9.3		35.8	30.3	B
9.5		15.7	3.7		9.5		49.8	34.3		9.0	50	4.4	10.9		9.5		48.4	26.9		9.5		37.1	57.4	
9.3		20.4	35.1		9.5	24	13.8	51.7		8.8		7.4	58.7	R	9.5		51.8	30.0		9.5		44.9	0.3	
9.3		21.7	39.2		9.5		28.4	36.4		9.0		27.4	16.1	K	9.5		55.1	51.2		9.5	44	16.7	10.2	
8.8	3	0.7	33.3		9.5	25	33.8	51.0		9.2	51	10.4	43.8		9.4		59.4	43.6		9.5		41.4	15.4	
8.5		3.0	26.3	K	8.6		36.1	29.8	K	8.7		22.9	9.2	L	9.5	15	9.4	49.8		9.1		46.4	0.9	
9.3		38.1	17.6		9.5		45.0	46.1		8.2		32.9	17.8	K	9.5		16.1	27.9		9.0		56.4	38.0	
8.5		49.4	12.7	K	9.4	26	18.9	32.2		9.5	52	4.3	13.0		9.5		24.1	30.4		9.4	45	6.9	24.8	B
9.4		51.7	7.9		9.0		45.1	2.8	K	9.3		17.3	51.0		9.5	16	24.0	17.0		9.5		41.4	29.6	B
6.8		56.7	53.1	K	9.5	27	25.1	16.2		9.5		34.2	41.1		9.5		30.1	34.5		9.5		59.9	24.8	B
9.2	4	38.2	1.2		9.5		33.2	44.6		8.8		36.9	15.0	K	9.5		38.5	14.4	R	9.5	46	16.8	44.3	
9.5		56.8	33.6		9.5		58.7	36.3		9.1		56.3	55.2	a	9.2		44.1	13.8		8.5		39.4	15.4	K
7.0	5	17.4	39.8	L	9.5	28	6.4	22.6		8.3	53	10.2	46.8	K	8.3		47.1	21.3	K	8.8	47	24.2	40.1	K
9.5		59.1	31.6		9.5		17.2	29.9		8.8		41.4	45.3		8.8		53.7	33.4		9.5		52.2	24.8	
9.0	7	36.5	40.9		9.5		19.4	57.2		9.5	54	3.4	33.5		8.5	17	46.1	28.3	K	9.5	48	9.5	7.5	
9.1	8	11.0	59.0	a	9.0		20.6	33.5		9.5		13.9	36.2		9.5		46.4	47.0		9.5		17.2	48.4	
8.0	9	19.0	55.9	K	7.5	29	40.0	31.5	K	9.2		30.4	13.6	K	9.3		49.0	5.4		9.5		38.3	7.0	
9.5		39.4	60.3		9.5		41.2	55.1		9.5	55	8.9	2.9		9.3	18	9.2	1.4		9.5	49	26.6	53.3	
9.0	10	5.7	15.1		9.5	30	9.8	3.0		9.3		12.4	49.4		9.4		46.7	58.8	B	9.5	50	11.2	34.8	
9.5		11.4	53.1		9.5		24.8	37.1		9.5	56	40.8	35.0		9.5		49.6	25.2		8.7		25.5	36.6	K
9.5		12.4	6.6		9.5		33.1	46.1		9.0		48.0	5.5	K	9.3	19	45.1	33.1		9.5		40.5	34.5	B
9.5		33.7	40.5		9.5	31	5.1	24.6		8.8		55.4	11.3	K	9.5	20	15.1	39.4		9.5	51	9.3	33.2	
8.4		37.4	1.2	K	9.0	33	3.4	59.3		9.0	57	8.6	15.5	K	9.5		34.4	7.7		9.5		58.9	28.3	
9.0	11	41.5	14.2		9.5		52.0	19.5		9.5		20.7	35.9		9.3	21	44.1	17.1		9.5	52	0.5	33.5	
9.5		54.0	15.7		9.4	34	0.0	8.2	D	9.3		44.1	22.0		7.8	22	48.0	8.1	K	9.5		16.5	45.3	
9.0		58.9	25.8		9.2		5.6	10.2	B	8.5	58	1.1	47.4	K	9.0	23	15.4	31.7	P	8.3	53	13.5	22.8	K
9.5	12	10.8	38.5		9.5		16.2	53.3		9.5		4.6	22.0		9.5		22.9	38.7		9.5		17.0	49.5	
9.5		24.6	30.9		8.9		23.7	57.6	K	9.2		52.7	60.2	aR	8.7		41.7	31.7	P	9.0		19.6	5.1	K
9.5		40.2	25.4		9.1		26.9	17.8		9.5	59	1.7	29.6		9.5	24	1.4	16.1		9.5		32.5	47.4	K
9.5		41.7	45.5		9.5		28.6	54.5		8.7		28.1	7.4	K	7.5		19.4	34.5	L	9.5		41.0	59.6	
9.5	13	33.1	37.1		9.2		29.8	45.5		9.0		36.4	54.7		8.6	25	8.6	51.9	K	9.5	55	3.5	22.5	
9.5		39.0	12.0		9.5		31.4	26.3		9.5	0	19.7	40.4		8.0		28.4	40.7	K	8.5		4.0	29.1	K
9.5	14	16.1	17.3		9.5		31.9	8.9		*9.5		41.8	11.6		9.5	26	22.4	29.7		9.5		13.0	6.4	
9.5		26.4	48.9		8.8	35	30.5	27.3	S	9.5		56.1	15.8		9.5		49.7	5.4		9.0		15.0	13.8	K
9.0		56.0	58.6	K	9.1		33.3	11.1		8.5	1	3.7	54.8	K	9.5		52.4	19.2		9.0		23.5	40.8	K
9.5	15	6.7	48.2		9.5		49.4	39.6		9.5		13.7	23.0		8.5	27	45.1	50.5	K	9.2	56	34.6	7.7	
9.2		41.2	5.7		9.2		54.0	54.3	K	9.5		24.8	1.9		8.8		53.4	44.0	K	9.5		39.5	26.5	
9.5	16	10.1	12.8		8.8	36	28.1	9.6		9.2	2	34.1	25.2		9.0	28	19.4	58.2	L	9.5		51.6	46.0	
		+	—				+	—				+	—				+	—				+	—	
10pr.		30.73	3.34		10pr.		30.76	3.32		10pr.		30.80	3.27		10pr.		30.83	3.16		10pr.		30.88	2.99	

2774°			
9.5	0	28.6	3.0

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	13ᵐ—14ᵐ		−1°			14ᵐ		−1°			14ᵐ—15ᵐ		−1°			15ᵐ—16ᵐ		−1°			16ᵐ		−1°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9.5	57	30.0	4.7		9.3	21	58.6	35.3	K	8.5	59	40.3	43.3	K	9.5	33	52.8	59.9	*a*	9.2	3	29.2	34.7	K
9.4		32.0	26.9		8.8	22	51.5	20.4	K	9.0		57.1	44.0	K	9.5	34	32.4	15.3	*B*	9.5		39.7	11.1	
9.5		57.0	54.5		8.2	24	35.4	8.5	K	8.8	0	2.9	59.9	K	9.0		46.5	34.5	K	9.5	5	2.0	1.1	
9.5	58	52.0	42.5		9.5		58.8	42.1		9.4		15.4	52.0		9.3	35	29.0	6.4		7.2		15.9	20.8	K
9.5	59	10.0	28.7		8.8	26	16.8	60.3	K	9.5	1	17.9	35.0		8.8		43.8	14.7	K	9.5		27.2	26.7	
9.5	0	22.5	25.5		9.3	27	9.4	19.8		8.3		40.7	61.0	K	8.7	36	2.8	27.2	L	9.3		44.2	51.0	
8.7		29.0	26.9	K	9.0		11.3	51.0		9.0		57.1	19.8		9.3		13.0	34.5	B	8.0		45.5	2.2	K
9.5		30.6	1.0		9.5	28	11.3	25.6		8.7	2	21.6	51.9	K	9.3		23.5	29.8	B	9.5	6	6.5	38.2	
9.5		54.0	32.8		9.5		18.7	40.8		9.5	3	58.8	29.9		9.0		29.5	51.2		6.8		10.4	6.6	K
9.5	1	24.2	6.8		9.5	31	13.6	56.7		7.0	4	4.9	42.7	K	9.5	38	9.5	54.6		9.3		17.3	24.9	B
9.5		29.0	23.5		9.5		18.7	40.8		9.3		42.6	0.1		9.5		29.8	44.2		9.5		18.5	37.2	B
9.5		29.7	52.0		8.0	33	32.2	47.8	K	9.3		53.7	11.6		5.5		34.1	20.9	L	9.0		29.0	33.6	K
9.5	2	46.5	48.1		7.7	34	1.0	24.2	L	8.7	6	1.2	5.6		8.8		39.4	6.6	K	8.5		32.2	57.7	
9.2		58.7	59.6	K	8.8		38.6	44.9	K	9.2		5.0	7.9		9.5		59.8	27.5		9.0		55.0	46.1	
9.5	3	24.8	41.9		9.5		43.3	24.9		8.8		27.6	51.8	*B*	8.7	39	8.2	8.5	K	8.5	7	7.7	33.3	K
8.0		30.0	59.3	K	9.3		50.1	2.6	*B*	8.5		31.1	20.8	L	9.3	40	6.5	4.1		9.5		26.7	35.4	
9.5		56.0	24.1		9.2		59.9	1.7	*B*	9.3		31.7	53.6		9.3		17.5	51.9		7.5		34.2	24.7	K
9.5	4	9.7	52.6		9.4	35	12.4	3.6		9.2		45.3	4.6	*B*	9.3		27.1	27.2		9.5		42.2	46.8	
9.1		10.0	16.1		9.5		36.6	44.9		9.3		45.9	24.9		9.5		44.8	21.0		8.5		42.7	57.9	K
9.0	5	13.5	16.9	K	9.5	36	8.4	30.0	*B*	9.5	7	11.9	0.1		8.3		59.1	43.6	K	9.5	8	31.2	42.6	
9.5		35.5	17.9		7.0		17.0	53.3	K	8.0		26.9	51.6	K	9.5	41	17.5	9.1		7.2		51.8	16.7	K
9.5	6	29.5	30.4	*B*	9.2	37	24.6	39.5		8.8	8	28.2	49.2	K	9.0		34.4	25.2	K	9.5	9	14.2	25.4	
8.9		34.4	7.0		9.5		32.8	36.1		8.8		46.5	11.7	K	7.8		41.1	32.1	K	9.5		38.4	35.7	
9.4		45.3	0.3		9.3	39	5.7	14.0		9.2	10	49.0	4.3	K	9.3	42	25.5	16.2		9.5	10	1.7	19.5	
9.5		54.4	27.9		9.0		20.6	4.7	K	7.3	11	27.2	3.9	K	9.3		28.0	43.2		9.5		36.9	12.8	
9.2	7	31.0	38.0	K	9.4		27.1	7.2		8.3		43.3	37.7	K	9.0		59.1	47.7		8.5		38.7	55.4	K
9.5		43.5	16.8		9.3		37.2	28.6		6.5	13	18.8	52.1	L	9.5	43	1.1	3.8		9.5		42.2	47.5	
9.5		50.0	49.1		8.6	41	40.6	4.6	K	9.2		32.7	25.9		8.5	44	43.5	49.5	K	9.3		46.2	38.8	
9.5	8	9.5	15.8		8.8		56.9	24.5		9.3		41.0	37.8		8.0	45	4.4	27.6	K	9.5	11	25.4	0.4	
9 5		42.3	0.7		9.3	42	50.4	38.0		8.8	14	14.8	29.0	K	9.5		13.8	55.7		8.8	13	44.7	31.9	K
9.5		54.8	3.8		4.5	43	30.5	41.5	K	8.5	15	9.6	1.0	*L*	9.5		30.1	51.9		9.4		55.2	25.0	
9.3	9	2.5	20.7		8.5		55.7	51.6	K	9.3		47.1	9.2		9.0		39.8	30.0		9.5	14	15.2	20.4	
9.2		12.5	36.5	B	9.5	44	49.1	7.1		9.2	16	58.1	40.4	K	9.0		59.5	30.4	K	9.2	15	5.6	16.0	
9.1		43.8	1.1	K	8.8	46	19.6	54.6	K	8.8	17	25.3	44.2	K	9.3	47	24.4	44.5		6.7		8.9	43.8	K
9.5	10	58.0	28.3		9.3		40.0	49.5		9.5	18	20.8	32.5		9.5		29.3	45.3		9.5		27.2	37.1	
9.5	11	16.5	35.6		8.8		52.4	18.0	*B*	9.5	19	24.8	46.7		9.5		38.1	35.2		9.5		51.8	11.8	
7.8		57.2	25.2	K	8.8	47	47.2	32.0	K	8.3		48.1	19.5	K	9.0	48	4.0	49.6	*B*	9.0	16	2.2	41.0	B
5.0	12	4.6	35.4	K	9.5		54.4	27.9	K	9.5	20	4.1	11.2	*B*	7.0		24.2	43.9	K	8.5		11.7	55.6	L
9.0	13	24.6	27.6		8.8	50	29.2	8.2	K	8.7		58.8	30.7	K	9.5	49	43.8	50.1		9.5		26.4	38.1	B
8.7		36.5	49.9	L	9.3		56.5	43.1		9.5	21	45.0	50.3		9.2	50	14.5	24.8		9.3		33.6	59.8	L
9.5		52.1	45.9		9.3	51	30.8	15.2		9.5		55.5	15.7		9.5		44.2	9.9		9.5		43.3	45.0	
8.5	14	5.6	43.2	K	9.3		32.5	20.5		9.3	23	17.1	7.4		9.3	51	18.8	28.6		9.2	17	17.2	37.0	B
6.7		30.6	19.2	K	8.5		43.2	13.4	K	8.3	24	18.8	33.5	K	9.5		54.5	5.4	B	9.5		17.4	12.5	
9.2	15	53.5	23.2		8.5	52	32.6	17.2		8.0		20.7	60.9	L	9.2	52	10.5	23.0	B	9.3		59.9	32.3	
9.2		53.8	16.1	*B*	9.0		45.1	38.0		9.1		26.8	51.5	*B*	9.5		45.5	22.7		9.5	18	7.4	2.2	
9.5		56.3	15.6		9.0	53	32.6	44.6	K	8.5		53.8	16.8	K	9.3	53	43.2	8.7	K	9.3		26.8	33.3	
9.0	16	9.7	45.6		9.4		52.5	49.2	B	9.5	25	17.3	0.8	*B*	9.0		56.2	10.2	K	9.5		30.9	37.8	
9.5		20.6	3.0		8.5	54	37.6	28.1	K	9.5	26	3.5	48.4		9.3	54	41.5	4.7	K	9.1	19	6.8	29.4	K
9.3	17	1.6	20.4		9.5	55	55.8	2.2		9.3		22.1	26.2		8.0	55	28.0	14.4	K	9.3		18.9	47.9	
9.3		3.9	13.5		9.5	56	17.1	5.7	*B*	9.6	28	11.8	48.7		9.5	57	20.5	42.7		9.2		54.6	3.4	
7.5		7.2	40.5	K	8.9		23.3	34.0		9.5		37.5	26.9		8.5	59	45.5	13.3	K	9.3	20	1.6	4.3	
9.5	18	36.6	60.3		8.8	57	30.5	58.3		9.5	30	9.6	36.6		9.5	0	2.1	21.0		9.5		2.1	35.7	
9.5		41.8	9.2		9.0	58	4.3	51.0		9.5		22.8	23.0		9.5	1	4.8	8.5		9.4		10.1	46.5	B
9.5	19	10.4	38.4		7.8		13.8	24.9	K	8.0	31	10.8	18.2	K	9.3		46.0	16.7		9.5		16.9	19.2	B
8.4		52.0	5.1	K	9.5		38.7	41.8		9.5		46.2	16.5		9.1		59.8	15.9		9.0		36.5	15.6	K
8.3	20	31.5	7.1	K	9.3		41.6	17.1		9.3		57.0	9.1		9.2	2	7.4	53.9	*a*	9.4		46.8	32.8	
5.0		44.6	34.6	K	8.8		47.7	17.5	K	9.2	32	25.4	17.4	*B*	7.8		28.7	13.5	K	8.8	21	2.6	59.7	L
9.2	21	28.1	55.0	K	8.8	59	1.6	46.1	K	9.5		30.4	16.7		9.3		37.2	47.8		9.1		31.6	30.1	K
9.0		48.1	4.2		9.3		27.9	6.9		8.8		42.8	50.8	K	9.5		46.0	26.4		9.5	22	5.4	44.0	
9.5		58.2	30.0		8.3		30.3	43.7	K	8.8		57.2	31.7	*L*	9.0		55.7	40.6	K	9.5		20.9	27.9	
10 pr.		*30.90*	*2.82*		*10 pr.*		*30.94*	*2.53*		*10 pr.*		*30.98*	*2.21*		*10 pr.*		*31.01*	*1.85*		*10 pr.*		*31.03*	*1.49*	

3080ᵃ			
9.5	33	23.7	19.1

3201 – 3260

16ᵐ — −1°

m	′	″	′	
9.4	22	25.1	30.1	aB
8.5	23	16.5	59.2	B
9.2		36.8	44.0	
9.5		55.3	38.8	
9.1	24	6.8	15.6	K
8.5		12.8	57.2	K
8.5		14.8	42.3	K
8.7		46.8	21.5	K
9.5	25	19.9	28.0	
9.0		44.3	18.7	K
9.1	26	13.3	39.5	K
9.5		47.4	59.9	
9.5	27	37.8	1.7	
9.0		42.1	56.5	K
9.2		51.9	43.0	
9.4	28	14.4	58.6	a
9.4		15.6	24.7	
9.4		27.9	29.8	
9.5		34.6	8.4	
5.8		44.3	60.6	K
9.5	29	15.4	29.1	
9.5		48.5	32.8	B
9.5	31	2.3	19.1	
9.2		3.6	47.2	
7.5		44.4	29.1	K
9.5		56.8	52.3	
9.3	32	9.9	48.9	
8.5		56.4	33.7	K
9.1	33	18.6	44.0	
8.3	34	15.4	52.0	K
8.8		15.8	54.7	L
9.5		27.1	8.7	
8.5		38.9	53.3	K
9.5		40.1	14.9	
9.5		48.8	47.2	
9.5		56.9	11.1	
9.0		57.6	31.2	
8.1	35	1.9	50.2	K
9.5		57.8	41.2	
9.3	36	17.4	20.0	B
9.4	37	31.8	22.9	
8.7	38	1.9	18.8	
8.8		19.9	0.5	
8.5		55.0	4.8	K
9.5	39	42.4	42.0	aeb
9.5	40	2.3	39.5	
9.5		7.8	46.8	
9.3		32.3	36.0	K
9.5		40.4	45.0	
9.5	41	2.9	7.0	
9.1		9.8	36.4	K
9.5		41.8	9.1	B
9.3		55.1	8.2	
9.0	42	31.9	47.3	K
9.5	43	9.4	27.9	
9.3		43.9	58.4	
9.5		57.8	20.0	
8.9	44	0.3	41.7	B
9.4		11.5	22.9	B
9.4		36.8	39.5	B
		+	−	
10pr.		31.05	1.22	

3261 – 3320

16ᵐ—17ᵐ — −1°

m	′	″	′	
9.0	44	37.4	8.2	K
9.5		39.3	47.9	B
9.5		43.5	49.0	
9.5	45	18.4	45.2	
9.3		25.4	28.9	
9.5		58.2	9.2	
9.5	46	1.9	39.0	
6.5		39.9	22.3	K
9.5	48	10.4	52.2	
9.5	49	20.4	28.6	
8.2		21.7	49.7	K
8.9		27.2	1.0	K
9.4	50	30.4	24.0	
9.4		32.4	46.6	
9.4		54.9	60.8	a
9.3	51	29.4	46.9	K
9.2		35.6	33.1	K
7.3		50.4	28.2	K
9.2	52	34.6	59.5	K
9.5	53	3.0	6.2	B
8.8		3.4	40.3	K
9.1		51.4	41.0	K
9.2		53.7	20.1	B
9.5	54	6.5	36.9	
9.3		44.9	39.3	K
9.5	56	42.9	45.9	
9.5	57	4.5	9.8	B
9.5		7.1	2.0	
9.5		23.4	52.8	
9.3		35.4	35.8	K
9.0	59	17.5	4.4	K
6.3		21.7	27.2	K
9.5		37.9	40.7	
9.5	58	59.8	44.3	B
8.7	0	31.7	44.0	K
8.5	1	11.6	55.2	K
9.4	2	17.1	20.8	B
9.5		24.9	46.6	
9.1		41.0	5.3	K
9.5	3	27.4	28.9	
9.3		51.3	15.5	K
9.3	4	11.9	16.4	K
9.5	6	59.3	52.3	
9.3	7	0.9	0.5	
8.9		15.2	11.1	K
8.8	8	16.2	7.6	K
9.5		22.1	32.8	
9.5	9	28.9	58.1	
9.0	10	36.7	7.4	
9.4	11	4.9	47.3	
9.5		6.1	22.4	
8.4		9.9	21.7	L
9.5		31.9	35.8	
9.5	12	1.0	7.2	
9.5		35.9	9.0	
9.0		53.5	27.2	K
9.4	13	15.4	56.0	a
9.3	14	15.4	46.9	K
9.5	15	23.3	0.2	
9.5		37.9	38.7	
		+	−	
10pr.		31.06	0.90	

3321 – 3380

17ᵐ — −1°

m	′	″	′	
9.5	15	46.4	45.6	
9.2	16	8.8	12.2	B
9.2		11.9	12.1	B
9.3		40.4	14.7	
9.5	17	3.9	5.6	
9.5		21.9	26.5	
9.1	18	2.1	47.3	
9.5		12.0	6.2	
6.7		26.4	29.3	K
9.1		44.4	41.7	
9.5	19	32.3	10.5	
9.5		34.9	33.1	
9.4		45.9	5.5	
9.3		48.3	35.8	K
9.5	20	1.9	10.9	
9.4		16.6	56.7	B
9.4		26.2	52.6	
9.4		37.9	22.7	
9.3		53.0	53.5	
9.5	21	39.3	60.0	a
9.1		42.0	22.0	K
9.5		42.5	6.9	
9.3	22	13.2	7.7	K
9.5		16.9	25.8	
8.5		26.9	11.5	K
8.7		33.8	52.8	K
9.5	23	9.6	29.9	
9.5		47.4	31.0	
9.5	24	23.6	28.6	
9.4		27.6	19.5	
9.5		28.7	32.7	B
9.5		33.7	37.1	B
9.4		35.6	26.3	B
9.3	25	24.5	22.8	B
9.3		40.1	57.9	a
8.9	26	21.6	53.5	K
9.3		22.4	31.4	B
8.0		56.8	39.9	K
9.4		58.1	14.6	
9.1	27	0.5	2.5	K
9.4		14.6	19.2	
8.0		21.8	29.9	K
9.5		26.6	32.3	
9.5		42.7	5.0	
9.5	28	3.4	1.2	B
9.0	29	24.6	46.5	
9.0	30	10.8	33.0	
9.0		46.0	3.8	K
9.5	31	2.1	31.2	
9.3		3.2	15.7	K
9.4		14.9	3.0	
9.5	32	8.8	47.2	
9.1		9.2	14.9	K
9.0	33	0.9	7.9	K
9.5		8.4	30.2	
9.0		33.1	50.1	K
8.3		35.6	20.2	K
9.5		59.1	49.7	
9.3	34	12.1	48.9	K
9.5		50.0	7.5	
		+	−	
10pr.		31.06	0.51	

3381 – 3440

17ᵐ — −1°

m	′	″	′	
9.5	35	8.6	17.0	
9.5		59.1	50.0	B
8.9	36	8.6	55.8	K
7.7		29.5	44.2	K
9.5		52.0	44.1	
8.0	37	10.6	40.3	K
9.2		39.2	25.7	K
8.5	38	44.7	5.4	K
8.2	39	9.8	9.1	K
9.5		22.0	22.2	
7.5		22.0	39.5	K
8.5		50.4	2.4	K
8.7		51.6	13.5	K
8.7	40	5.6	27.7	K
9.5		24.9	2.5	B
9.3		33.8	56.5	a
9.0		45.9	32.7	
7.5		47.6	46.1	K
9.5	41	21.6	42.4	
8.7		23.2	49.2	K
9.5		44.1	12.5	
9.1		56.0	22.6	
9.2	42	23.1	35.3	K
9.5		32.1	46.0	B
9.5		39.3	32.6	
9.5	43	1.8	46.0	B
9.2		19.9	21.9	
9.4		43.8	0.3	B
9.4		45.1	27.8	
9.5		46.5	54.1	
9.1		59.6	6.6	K
6.5	44	30.4	11.0	K
7.8		52.5	22.3	L
9.0	45	1.6	29.2	
9.3		56.3	13.9	B
7.1	46	35.7	34.1	L
9.5	47	17.8	47.9	
8.7		38.8	42.6	K
8.3	48	38.1	23.0	K
9.5		42.6	14.3	
9.3		45.7	26.4	K
9.3		56.1	36.5	
9.1	49	6.6	22.6	K
9.5		55.6	16.0	
9.0	50	8.6	32.3	K
8.4		14.5	45.4	K
9.3		50.1	56.5	a
9.5	51	14.7	2.8	
9.4		24.8	33.4	
9.5		54.1	6.3	B
8.7	52	25.1	9.6	K
9.0		44.3	40.3	
9.3	53	18.8	11.7	
9.5	54	21.9	28.4	
8.0	55	18.1	18.8	K
9.1		19.4	28.5	K
9.2	56	27.4	36.1	K
9.5		29.7	0.1	
9.5		46.5	0.1	
8.9	57	16.9	45.0	K
		+	−	
10pr.		31.07	0.23	

3441 – 3500

17ᵐ—18ᵐ — −1°

m	′	″	′	
9.3	57	26.2	19.1	
9.4		52.2	16.3	
9.3		57.4	43.1	K
8.4	58	1.4	57.0	K
9.1		18.1	6.1	
8.7		19.9	28.0	L
9.5		40.5	9.5	B
8.8		56.9	10.0	K
9.1		57.2	2.9	B
9.2	59	25.4	15.6	K
8.2		34.9	46.5	L
9.5		47.9	12.5	B
8.7	1	2.9	30.5	L
9.4		59.0	58.3	B
8.5	2	10.9	9.1	K
9.3	3	1.4	46.8	K
9.4		57.4	53.5	a
9.3	4	24.4	4.9	B
9.5		36.0	10.4	B
9.5	5	14.4	60.6	
7.3		45.3	44.7	K
9.2	9	3.9	0.5	K
9.0		38.7	53.0	K
9.4		47.3	46.6	B
8.8		55.1	16.1	B
9.5	10	8.5	50.5	
9.5		13.3	13.5	
7.6		14.0	29.8	K
7.6		35.3	21.9	K
8.5		57.9	57.2	K
9.5	11	0.0	8.5	
9.5		31.4	10.8	B
9.5		58.1	20.5	
9.5	12	19.0	59.3	a
8.9	14	5.2	35.4	
7.1		55.6	16.0	K
9.5	15	9.1	20.7	
9.5		17.6	32.2	a
9.0		32.6	44.6	
9.3		49.4	0.1	
7.6	16	20.1	12.5	K
7.6		55.1	7.6	K
9.4		55.1	39.8	a
9.3	17	9.3	3.0	K
8.0		11.1	55.0	L
6.5		26.6	38.8	K
9.3		30.1	38.8	K
9.1		35.6	48.5	
9.0		48.1	20.8	
8.5	18	32.0	45.0	K
9.5	19	25.6	44.7	B
8.7		38.8	33.2	B
9.5		54.5	27.5	
9.1	20	7.8	12.7	
9.4		8.7	39.2	
8.7		14.1	51.5	K
8.4		25.7	10.3	K
9.2	21	34.0	18.5	K
8.7	22	1.8	13.9	K
8.2		19.5	54.5	K
		+	+	
10pr.		31.07	0.16	

3501—3560

	18ᵃ		–1°	
m	′	″	′	
8.7	22	56.7	57.6	K
9.2	23	48.6	21.9	
7.7		58.1	43.5	L
6.7	24	28.9	6.5	K
9.2		47.8	2.1	
9.3		56.7	25.7	
9.3	25	15.6	19.5	
8.2		38.9	33.3	K
9.2		41.2	56.0	*a*
9.2		43.6	1.7	K
9.4		57.7	50.2	B
9.5	26	14.1	60.3	
9.5		26.1	22.9	
9.5		36.6	9.6	
9.5		38.4	31.3	
9.5	27	12.2	51.4	
8.7		13.6	61.0	K
9.5		25.2	11.2	
9.5		37.1	35.4	
9.5	28	18.4	55.8	
8.8		43.4	26.0	
9.1		53.7	39.9	
9.2	29	45.4	35.3	
9.2		47.3	3.1	K
9.5	30	8.1	15.3	
8.6		27.2	56.2	
9.2		33.4	51.2	B
*9.5		47.9	46.3	
6.7		50.6	13.6	K
9.4	31	15.0	43.0	B
8.8		37.7	12.9	
9.4	32	7.1	2.2	B
9.5		11.2	6.4	
8.6		20.6	24.7	L
9.5	33	17.7	56.9	*a*
9.5		20.1	52.6	
9.3		20.2	15.3	
9.5		39.6	28.8	
8.6		45.7	57.2	K
9.5	34	0.2	*21.3*	
9.5		14.1	17.7	
9.3		35.2	26.0	K
8.6		39.8	6.3	L
8.2	35	0.1	26.0	K
9.4		19.7	54.2	B
9.5		29.2	27.8	
9.3		29.4	34.7	
8.7		44.9	5.4	K
7.8		47.1	46.2	K
9.5		51.8	6.0	
7.5	36	6.6	40.9	K
9.2		24.2	43.3	K
8.2		42.4	41.0	K
9.2	37	3.4	48.5	K
8.8		5.6	55.5	K
9.1		10.3	7.2	B
8.8		48.2	12.9	
9.5		59.1	29.3	B
6.1	39	0.1	6.7	K
9.5		3.1	57.4	
		+	+	
10pr.		*31.06*	*0.46*	

3561—3620

	18ᵃ		–1°	
m	′	″	′	
9.5	39	23.0	16.8	
9.5		31.6	59.6	
9.5		45.5	55.2	
9.3	40	9.1	38.4	
9.2		37.4	10.4	
9.3	41	6.0	19.3	B
9.5		20.6	50.0	B
9.2		33.1	1.4	
9.5		38.1	3.4	
8.0		46.5	8.3	K
9.3	42	49.5	44.3	
9.4		50.0	60.0	
9.5	43	6.8	54.9	
9.2		10.6	59.0	*a*B
9.5		11.2	53.8	B
9.5		13.1	23.2	
9.4		41.1	25.3	
9.5		49.4	56.5	
9.5		53.8	51.5	
8.8	44	3.3	43.3	K
8.2		8.3	12.7	L
9.0		8.7	55.6	K
9.5		22.1	1.2	
9.5		27.1	52.6	
9.3		39.7	7.8	
9.5		52.5	18.7	
8.8	45	47.0	52.0	
9.2	46	2.7	26.9	
9.3		19.6	52.6	K
9.4		27.6	48.9	B
8.7		35.0	28.6	L
8.3		43.0	42.9	K
9.3		48.1	26.9	
8.8		56.6	12.9	
8.9	47	4.9	28.6	K
9.5		13.7	22.0	
9.5		36.0	25.4	
9.5		46.8	23.8	
9.3		49.9	44.8	
9.5	48	10.9	33.0	
9.5		37.1	29.3	
6.5		51.1	58.5	L
9.4	49	20.8	12.5	B
9.5		27.2	18.3	
9.3		37.5	6.5	
9.5		47.1	0.0	
9.1		54.4	1.0	K
9.2	50	15.9	21.9	R
8.6	51	0.9	46.4	K
9.2		11.1	48.4	K
9.2		15.1	13.1	
9.4		27.4	50.2	B
8.5		48.5	33.1	L
9.3		54.3	54.7	*a*B
9.5		56.2	20.1	
9.3		59.4	35.6	
9.5	52	8.7	46.8	B
9.5		11.0	48.8	
9.5		15.0	50.6	
9.2	53	14.9	57.0	*a*
		+	+	
10pr.		*31.06*	*0.67*	

3621—3680

	18ᵃ— 19ᵃ		–1°	
m	′	″	′	
9.5	53	27.5	7.0	
9.2		53.4	56.4	K
9.3	54	9.0	16.0	
9.5		38.5	2.4	
9.5		39.3	34.3	
9.5	55	3.4	23.2	
9.3		4.2	4.1	
9.5		36.7	58.7	
9.2		48.8	6.6	R
9.5	56	11.3	18.5	
8.5		16.1	23.7	K
9.4		22.9	28.1	
9.3		26.6	21.9	B
9.5		29.1	10.1	
8.2		30.6	0.3	B
9.5		32.9	57.7	
9.5		42.7	29.6	
9.4	57	1.6	55.0	B
9.5		30.6	36.7	
9.5		32.1	0.3	
7.1		47.0	8.8	L
6.5		48.3	43.5	L
9.4	58	10.7	11.3	
9.4		12.3	19.0	B
8.5		34.0	3.3	K
9.2		37.4	57.0	*a*R
8.8		41.3	13.4	
8.2		44.8	19.8	L
6.8	59	4.9	33.1	L
9.2		12.8	48.0	
9.5		14.4	17.5	
9.5		17.0	9.3	
8.0		26.0	56.8	R
9.5		26.3	6.7	
9.5		43.1	54.5	
9.5		50.8	36.5	
7.5		57.1	20.5	K
9.5	0	5.1	56.8	
9.1		7.5	57.9	*a*
9.3		14.8	30.4	K
9.2		24.2	14.8	
8.2		27.1	29.3	K
9.2		37.7	9.3	
~~9.5~~		~~51.6~~	~~55.3~~	
9.5	1	14.9	12.6	
9.3		16.4	33.3	
9.5		38.6	10.2	
9.3		44.4	56.5	K
9.5		59.0	3.7	
9.5	2	2.0	23.6	
9.5		5.1	24.3	
9.5		19.1	37.4	
9.5		25.9	56.3	
9.5		29.1	33.2	
9.5		33.0	55.5	B
9.3		37.3	11.2	
8.5		39.9	18.3	L
9.3	3	30.8	54.2	
9.5	4	12.4	39.7	
9.5	6	2.8	45.9	
		+	+	
10pr.		*31.06*	*0.86*	

3681—3740

	19ᵃ		–1°	
m	′	″	′	
9.5	6	30.4	58.2	
9.3		35.1	57.0	*a*B
7.4		48.7	23.0	L
9.5		51.1	14.8	
9.5		58.4	45.3	
*9.0	7	4.5	32.9	L
*9.3		29.1	47.0	
9.5		31.6	10.9	
9.4		37.2	52.4	R
9.4		50.8	44.9	
9.5	8	12.3	35.9	B
9.5		17.4	4.5	
8.9		25.0	59.2	K
9.5		40.7	38.5	
9.5	9	13.8	52.9	
9.5		36.9	2.9	
9.1		39.9	50.8	B
9.0		55.6	8.4	
8.8	10	4.4	25.7	
9.3		12.9	56.9	
7.5		28.5	11.7	L
8.6		33.4	16.0	L
9.5		41.6	6.3	
9.3		51.1	17.1	
9.5	11	10.7	55.5	
8.3		13.2	50.2	K
9.3		28.5	35.7	
9.3		46.6	38.4	
9.5		57.7	19.4	
9.5	12	6.6	21.5	
8.7		34.3	51.4	K
9.5		35.4	41.5	
8.9		37.1	7.7	
8.6		52.6	25.2	K
7.0		56.1	34.2	K
5.3	13	7.3	9.2	L
8.8		18.6	59.3	
9.4		31.7	42.4	
9.5		33.7	45.5	B
7.2		37.7	26.2	K
9.5		53.9	44.4	B
9.3	14	15.4	38.3	
9.0		34.1	30.8	K
9.4		55.6	32.3	B
9.5	15	19.9	17.9	
9.3		25.8	61.0	*a*
9.5		27.1	39.7	
9.5		45.5	4.6	
9.5		54.9	28.5	
8.8	16	1.6	38.3	K
9.5		34.4	50.4	
9.2		49.5	41.0	B
9.5		58.5	50.4	
9.3	17	1.4	29.1	
9.5		37.3	22.2	
8.8		38.9	38.7	B
9.4		41.0	38.6	B
9.0		42.3	8.5	
9.3	18	27.8	50.0	
9.5		37.1	56.7	
		+	+	
10pr.		*31.05*	*1.04*	

3741—3800

	19ᵃ		–1°	
m	′	″	′	
9.4	18	58.4	48.6	B
8.7	19	11.1	7.1	K
9.3		14.9	41.9	
8.2		30.1	11.4	K
9.4		51.4	1.5	B
8.9	20	6.4	4.1	K
8.3		33.4	37.7	L
9.5		35.9	2.8	
8.3		37.1	22.8	L
9.5	21	15.6	1.4	
9.5		17.5	5.3	
9.4		32.6	24.7	
8.0		49.4	40.6	K
9.2	22	10.7	18.7	B
9.5		20.1	0.0	
9.2	23	3.3	56.7	*a*
9.2		4.2	26.9	
9.3		14.6	49.6	
9.4		43.7	3.3	
9.0		44.7	14.5	
8.5	24	0.2	8.2	
9.5		8.6	20.6	
8.8		13.6	34.9	
9.2		28.9	55.6	*a*
9.2		35.8	11.4	
8.7		46.5	44.9	K
9.5	25	24.6	40.0	
8.2		29.3	18.3	K
8.4		45.3	8.2	K
9.5		46.4	6.5	
~~9.5~~		~~51.6~~	~~54.9~~	
9.5	26	45.7	8.0	
9.2		47.2	3.2	
8.9	27	0.7	47.2	K
9.4		22.2	23.4	B
8.9		49.1	47.8	K
9.0	28	8.4	59.1	K
9.3		12.6	52.5	
9.2		24.5	55.0	K
9.5		48.5	34.4	
9.5		49.2	26.2	B
4.2	29	14.3	35.7	L
9.5		16.4	23.1	
9.3		16.5	57.0	*a*B
9.2		19.0	5.8	
9.2		29.0	40.9	
9.5		38.8	34.8	
9.5		55.7	32.9	
9.0		57.2	57.9	
8.7	30	5.1	21.7	L
8.9		14.0	4.6	
9.3		25.4	23.7	B
9.3		42.1	14.4	
9.3		50.7	35.9	K
8.3		55.1	14.5	L
9.2	31	3.1	25.3	
9.1		6.2	34.8	K
9.5		19.8	25.3	
9.1		52.4	36.8	K
8.3		53.2	48.0	K
		+	+	
10pr.		*31.05*	*1.23*	

527ᵃ				
9.6	*30*	*45.8*	*2.2*	*B*

3685ᵃ				
9.6	*7*	*0.7*	*57.3*	*B*
3686ᵃ				
9.6	*7*	*10.5*	*57.4*	*B*

m	19ʰ	−1°	
	3801—3860		
9.4	31 56.0	9.8	B
9.2	32 15.6	51.4	B
9.5	48.5	5.5	
9.3	33 12.7	6.0	
9.2	19.4	25.9	K
9.3	33.6	33.1	
9.5	46.1	47.9	
9.5	34 12.4	25.2	
9.5	19.7	6.7	
9.5	57.8	0.8	
9.5	35 47.4	54.2	
9.5	36 9.0	3.7	
9.5	37 9.4	43.3	
9.5	24.3	12.2	
9.1	34.3	56.8	α
8.3	37.1	42.8	K
8.6	42.2	30.4	
8.8	44.6	1.1	
8.0	53.1	50.4	K
8.9	38 5.9	2.6	
7.9	13.1	2.4	L
9.4	15.2	0.6	
9.5	50.4	7.4	
7.7	39 5.5	43.1	K
9.3	10.6	0.5	
9.1	13.1	24.8	K
9.5	19.1	14.7	
9.5	40 6.9	21.9	
9.5	37.7	8.3	
9.4	41 23.3	33.5	
9.0	33.4	60.6	K
9.5	56.7	5.3	
9.5	42 2.8	19.2	
8.7	3.9	27.0	
9.5	5.1	2.7	
8.8	8.4	54.8	K
9.5	54.8	21.3	
9.3	43 7.7	1.8	K
9.4	44.9	21.6	
9.5	51.0	26.9	
9.2	52.0	54.9	α
9.0	44 4.6	0.4	
9.4	24.0	34.9	
9.5	26.4	25.8	
8.9	51.1	38.2	K
8.9	57.0	3.4	K
9.5	45 11.8	20.6	
9.5	16.4	15.8	
9.5	37.2	6.1	
9.5	46 3.7	1.6	
9.5	13.1	49.7	
9.5	14.7	44.5	
9.4	52.2	4.4	B
8.6	47 12.0	8.5	K
9.4	27.5	3.4	B
9.2	31.5	17.5	K
9.5	42.5	3.2	B
8.5	42.6	13.2	K
9.5	48 27.0	34.1	
9.5	28.5	7.7	
10pr.	+ 31.04	+ 1.43	

m	19ʰ—20ʰ	−1°	
	3861—3920		
9.5	48 59.9	55.5	
9.5	49 10.6	28.9	
8.7	27.2	34.8	K
8.2	32.5	22.2	K
9.5	50 8.7	60.8	
9.5	40.2	52.0	
9.5	41.4	23.2	
9.5	43.2	13.6	
9.2	51.2	0.1	
9.2	54.5	14.0	B
9.2	59.5	3.1	
9.2	51 0.1	56.6	αB
9.4	11.0	0.9	
9.4	16.3	59.9	
9.0	52 12.9	49.0	α
8.8	13.2	24.4	K
9.5	25.2	47.2	
9.5	50.9	18.8	
9.2	53 25.2	60.0	K
9.0	27.7	24.5	K
9.5	54 7.5	55.6	
9.5	13.3	43.9	
9.5	32.8	2.3	
*9.0	57.3	14.1	K
8.7	55 17.0	0.6	K
9.5	56 16.3	2.3	
6.5	54.8	6.1	K
8.8	57 5.7	43.2	K
9.5	58 24.3	47.3	
9.4	25.0	16.8	
9.2	36.0	18.5	
9.5	55.0	17.2	
9.5	59 29.5	56.7	
8.5	38.7	16.8	K
9.5	49.5	42.8	
9.2	0 8.5	1.2	
9.5	11.7	61.0	
9.5	20.8	15.4	
7.0	32.6	5.7	K
9.5	59.0	3.5	
9.0	59.8	23.7	K
7.8	1 53.7	42.8	K
9.0	54.5	23.0	
9.5	56.2	55.6	
9.3	2 4.3	24.6	B
9.5	22.7	31.3	
9.3	38.0	15.8	
9.5	45.5	53.3	
8.7	3 24.9	31.6	K
9.5	27.3	37.7	B
3.3	49.5	14.8	K
9.5	51.7	54.3	B
9.5	4 11.0	1.9	B
9.5	16.0	40.6	B
9.5	28.3	22.0	
9.5	32.4	7.0	
9.5	51.5	8.0	
9.5	54.8	58.5	
9.5	5 37.4	7.0	
6.7	43.9	26.2	K
10pr.	+ 31.02	+ 1.65	

m	20ʰ	−1°	
	3921—3980		
8.3	5 59.1	39.4	K
9.3	6 8.8	30.7	
9.5	19.4	46.7	
9.0	26.3	7.4	
8.3	32.3	18.9	L
9.5	33.6	55.3	
9.0	34.7	61.0	
9.2	58.9	14.5	B
9.0	7 1.7	38.2	K
9.0	2.3	43.9	
9.5	4.0	51.8	
9.5	10.4	33.5	
8.5	21.4	35.5	K
*9.0	8 7.9	8.8	B
8.2	56.0	55.5	K
8.5	9 5.8	61.0	K
9.1	27.1	55.3	K
7.8	28.3	39.0	K
9.5	45.0	1.0	
9.5	50.1	19.6	B
9.3	10 4.8	45.6	
9.3	11.4	10.9	
9.5	39.9	31.4	
9.5	46.8	14.7	
9.5	50.7	16.7	
9.5	11 4.4	27.3	
9.0	19.9	12.6	
9.5	23.1	56.7	
9.0	28.6	47.4	
9.5	12 5.5	41.9	
6.5	13.8	32.8	K
7.5	18.8	21.3	K
8.1	21.8	45.1	B
7.8	25.3	7.6	K
9.3	49.6	45.0	
9.5	49.9	17.5	
9.3	53.8	34.1	
9.3	13 1.9	9.5	
8.8	23.8	54.8	K
9.3	23.9	15.5	B
9.5	14 7.2	0.0	
9.2	12.8	23.0	
9.5	25.6	30.7	
9.0	42.9	22.0	K
9.3	43.6	54.3	
9.2	16 1.1	25.6	
9.5	8.2	24.6	
8.3	10.3	31.4	L
9.0	14.3	3.1	K
9.5	34.4	59.5	
8.0	41.9	2.0	K
9.0	42.1	30.3	
9.0	50.7	17.4	B
9.5	56.6	38.7	
9.0	17 2.4	27.9	
7.9	11.3	60.3	L
9.5	26.8	49.8	
9.5	18 11.4	55.7	
9.5	25.2	17.7	
8.8	34.1	8.7	
10pr.	+ 31.01	+ 1.82	

m	20ʰ	−1°	
	3981—4040		
9.5	19 29.0	40.5	
7.7	55.6	61.0	K
9.0	20 57.8	0.3	
7.8	21 27.8	19.5	K
9.5	28.5	33.1	
9.5	35.3	55.1	
9.0	50.9	37.0	
8.3	22 45.3	39.7	K
8.5	23 25.4	58.2	K
9.5	24 38.2	28.9	
8.2	25 10.7	57.3	L
9.5	14.4	33.2	
9.0	26.8	35.9	
9.0	50.6	18.6	
9.1	57.8	54.3	B
9.3	26 40.9	15.7	
9.5	44.4	1.5	
8.0	27 5.9	10.9	K
9.0	12.9	37.3	
9.0	16.9	0.5	
9.3	26.8	24.8	
9.5	49.4	38.0	
9.2	58.7	48.0	
9.5	28 7.9	15.4	
9.2	9.8	37.3	B
9.5	10.8	39.2	B
9.3	21.3	55.1	αB
8.8	33.8	60.2	
8.9	53.8	0.7	
9.0	29 15.1	58.6	
9.5	16.6	31.7	
9.3	35.0	35.7	B
9.3	36.0	33.6	B
8.8	39.8	0.1	
7.8	41.8	49.1	K
4.7	30 51.6	36.9	K
9.0	58.8	53.5	
9.5	31 26.8	24.1	
9.3	34.9	7.4	
9.5	54.4	50.8	
9.3	32 1.8	23.1	
9.5	15.3	40.7	
9.5	45.7	0.5	
9.5	33 26.9	1.5	
8.8	27.1	7.0	K
9.5	31.8	32.8	
8.7	41.4	34.9	S
9.3	34 4.6	39.0	
9.3	6.9	9.1	
9.5	39.8	33.8	
9.3	40.4	55.7	α
9.3	35 14.8	8.5	
9.5	15.4	34.8	
9.3	16.9	56.7	α
8.8	34.4	40.4	B
9.5	46.6	33.1	B
9.1	36 4.8	37.3	B
9.5	18.2	41.7	B
9.5	19.5	51.0	
9.3	37 4.4	29.2	
10pr.	+ 31.01	+ 2.03	

m	20ʰ	−1°	
	4041—4100		
9.0	37 20.3	53.6	
9.5	23.3	37.7	B
8.0	43.8	34.5	K
9.0	56.8	20.6	
9.5	38 4.3	28.5	B
8.6	5.9	57.2	B
7.8	30.9	21.3	K
9.5	55.0	9.3	
9.3	58.8	56.0	
8.3	39 16.9	21.7	K
9.5	33.7	5.6	B
9.0	39.9	52.3	B
9.3	40 33.6	33.5	
9.5	41 13.9	7.7	
9.5	29.0	42.2	
9.2	45.0	35.1	
6.8	50.1	5.6	K
9.0	54.8	13.3	K
9.3	43 3.1	2.1	B
9.3	7.4	40.4	
9.0	42.6	37.3	
9.0	44 7.8	41.1	
9.5	26.1	6.4	
9.3	35.3	9.4	
9.0	45 24.8	8.7	
9.0	37.6	37.0	
9.3	37.6	2.2	
9.5	31.0	47.8	B
9.0	46 22.8	17.5	
9.5	25.0	3.4	
9.5	38.6	27.9	
9.0	47 8.8	15.7	
8.2	24.4	54.0	K
8.2	28.3	16.1	L
6.7	40.0	55.1	K
9.3	52.2	40.8	
9.3	48 24.4	53.1	
9.5	47.7	29.2	B
8.3	49 6.0	37.0	K
9.0	28.2	35.2	
9.3	35.7	44.6	
9.0	40.5	56.8	K
9.5	53.8	16.1	
9.5	50 22.0	15.8	
9.2	51 48.8	23.9	B
9.4	52.0	18.2	B
9.2	57.5	4.9	
9.4	57.8	22.0	B
9.5	52 0.0	31.0	
9.5	22.2	3.5	?B
9.5	53 3.5	18.2	
8.7	9.5	27.9	K
8.3	37.5	20.9	K
9.3	55 28.5	1.9	
6.8	32.0	30.3	K
9.5	36.5	15.0	
9.5	37.0	41.8	B
7.3	38.7	52.9	K
*9.5	56 24.0	28.5	
9.0	45.5	16.5	
10pr.	+ 30.98	+ 2.22	

3884ᵃ				
9.5	55	12.3	3.8	
3934ᵃ				
9.4	8	56.7	7.4	B
4090ᵃ				
9.5	56	42.5	26.4	B

10° — 23ˢ

−1°

4101—4160

♒	20ˢ—21ˢ	−1°	
	′ ″	′	
9.0	57 33.0	38.0	K
9.5	49.7	25.1	
9.0	58 38.0	15.0	
9.5	42.3	4.4	
8.4	59 17.0	34.6	K
7.7	24.7	33.1	K
9.0	52.5	10.4	
7.3	54.2	21.1	K
9.3	0 28.7	39.0	
9.3	41.7	15.4	
7.0	41.0	33.5	K
9.3	2 28.7	35.6	
9.5	50.0	28.6	
9.3	3 25.0	24.8	
9.2	42.0	34.9	K
7.8	4 2.7	52.7	L
7.5	10.3	27.9	K
9.5	27.8	28.2	
9.5	31.9	27.2	
8.8	40.5	36.4	L
9.0	48.0	55.4	
9.2	5 18.0	20.7	
8.0	39.5	44.6	K
9.5	42.5	17.2	
9.2	6 38.7	39.4	L
9.5	41.7	2.1	
9.2	45.4	26.9	K
9.5	45.7	19.6	
9.0	7 3.3	35.0	K
9.5	4.6	9.1	
7.2	13.4	25.1	K
8.7	34.1	46.7	L
9.5	40.7	3.0	
8.5	8 11.4	49.1	L
8.5	50.6	30.4	L
8.0	9 6.8	13.4	B
9.5	28.1	8.4	
8.3	32.6	40.4	K
9.5	10 16.6	3.5	
8.7	26.1	60.3	K
9.5	43.7	21.0	
9.0	47.1	34.1	B
9.5	11 34.1	2.1	
9.4	38.9	26.0	B
9.5	39.1	37.3	
9.4	46.8	20.3	B
9.3	12 4.7	57.8	
9.5	6.4	41.1	
9.3	32.5	20.9	B
9.5	32.6	47.4	
9.5	13 12.8	19.4	
9.0	13.0	21.0	
8.7	14 4.1	26.9	K
9.3	29.6	59.5	a
9.0	15 5.6	14.0	L
8.5	10.2	38.7	K
9.3	10.6	20.6	
7.8	44.1	23.7	K
8.8	51.4	35.2	
8.5	16 41.1	0.1	
	+	+	
10pr.	*30.96*	*2.43*	

4161—4220

♒	21ˢ	−1°	
	′ ″	′	
9.5	16 59.6	7.0	
9.3	17 24.2	33.1	
9.3	40.7	18.9	
9.0	18 1.7	33.1	
8.8	5.6	36.3	K
9.2	38 3	12.5	
9.5	51.9	53.6	
9.5	20 25.9	6.6	
9.5	51.2	56.6	
9.5	23 8.7	9.8	
9.3	16.3	57.3	B
9.5	24 38.0	21.0	
9.2	25 21.4	31.3	B
8.5	37.8	58.4	K
neb	59.0	28.2	L
9.2	27 39.5	40.3	
9.5	54.0	36.2	
9.3	28 41.0	55.5	
9.3	29 33.8	36.5	
6.2	30 8.7	1.7	K
9.0	25.0	25.5	
9.0	34.5	24.4	
9.0	48.2	58.7	
9.5	31 9.0	54.5	
9.0	17.1	20.5	B
9.5	13.0	29.8	B
~~9.3~~	~~18.0~~	~~27.8~~	
9.5	49.0	45.9	
9.5	32 8.7	60.5	
9.5	24.8	49.0	
9.0	33 38.0	53.8	
9.0	57.2	51.0	
9.5	34 14.7	2.8	
9.5	43.8	41.1	
9.0	35 50.8	5.8	
9.5	57.3	7.9	
9.5	36 40.5	55.5	
9.3	37 25.2	1.2	
~~9.5~~	39 ~~11.5~~	~~53.4~~	
9.0	37.9	18.9	B
9.5	45.5	4.7	B
9.0	47.5	11.7	B
9.3	53.3	11.9	B
9.3	40 40.0	28.6	
9.0	55.8	37.2	
9.5	41 57.6	57.9	B
9.5	42 16.0	42.7	
9.6	30.0	48.6	
7.5	48.5	15.9	K
9.5	43 54.5	38.2	
9.5	44 8.5	21.7	
8.3	37.2	56.6	K
9.5	58.8	23.7	
9.0	45 29.5	45.2	
8.8	32.5	49.6	
9.5	46 44.5	14.5	
9.5	47 3.5	43.8	
8.8	53.7	9.3	K
9.0	48 46.5	39.6	
8.3	58.0	21.0	K
	+	+	
10pr.	*30.93*	*2.68*	

4221—4280

♒	21ˢ—22ˢ	−1°	
	′ ″	′	
8.3	49 40.5	27.9	K
8.5	50 15.5	18.6	K
8.7	37.0	32.7	B
9.3	44.0	20.6	
9.5	51 19.7	52.0	
9.0	52 0.0	34.5	
9.3	17.8	44.8	a
9.5	30.0	13.4	
9.5	39.0	44.8	
9.0	53 7.5	16.5	
9.0	18.5	24.1	
9.0	40.5	45.2	
7.8	54 17.5	48.6	K
8.7	30.3	0.8	R
8.8	30.7	46.3	
7.7	55 6.5	36.6	L
9.0	19.0	26.2	
9.1	22.5	36.9	B
9.5	56 45.5	15.2	B
9.3	57 4.0	30.5	
9.3	8.0	52.4	a
6.0	20.5	35.5	K
9.5	24.5	51.8	
8.8	46.2	51.0	
9.1	48.7	24.5	
2.8	58 21.0	1.4	K
9.0	41.0	14.8	
8.3	59 1.5	58.7	K
8.3	25.2	26.5	K
9.0	53.7	31.3	
9.5	0 30.2	31.0	
9.5	33.5	13.8	
9.3	36.8	39.3	
9.3	52.5	56.5	
9.0	1 30.7	41.1	L
9.5	2 11.7	12.7	
9.5	15.0	47.0	
9.3	3 1.5	46.9	
9.3	29.5	53.8	B
8.8	4 8.5	41.4	
8.3	19.5	56.2	S
8.3	23.9	3.6	K
8.7	24.2	25.1	
9.0	5 35.5	55.9	
8.5	39.5	25.1	
9.5	49.8	5.5	
9.3	56.5	32.0	
9.3	6 6.0	32.4	
8.8	42.5	22.4	
9.0	7 14.5	58.0	
8.8	16.5	6.5	
8.8	18.8	30.0	
9.5	18.8	5.1	
9.5	51.0	22.4	
9.0	8 24.0	39.0	
9.3	46.5	31.4	
9.0	9 5.4	2.9	
9.5	46.5	14.1	
8.5	54.0	24.8	B
8.5	10 38.5	51.0	
	+	+	
10pr.	*30.89*	*2.89*	

4281—4340

♒	22ˢ	−1°	
	′ ″	′	
8.8	10 50.0	12.4	
7.8	11 1.5	50.4	K
9.5	42.0	41.8	
8.8	12 11.8	19.0	
9.0	13 9.2	14.5	R
9.5	14 12.0	35.2	
9.5	59.0	26.5	
9.5	15 11.5	58.3	
9.5	16 2.0	45.2	B
7.5	17 8.2	55.5	L
9.5	18 0.8	14.8	
8.8	18.0	34.1	
9.5	49.3	3.2	
8.3	19 4.0	17.2	K
9.5	22.5	34.5	
9.3	38.7	3.9	a
8.8	43.7	3.6	K
9.5	20 52.0	40.0	
8.8	21 22.5	30.7	
9.3	36.0	29.7	
8.5	50.4	8.9	K
9.5	22 16.0	38.6	
8.5	26.5	28.2	
9.5	33.3	14.5	
8.3	56.0	28.5	L
8.8	23 3.5	47.3	
8.7	27.7	14.1	K
9.5	54.2	5.3	
8.8	25 14.0	31.1	
9.5	37.5	52.1	
8.5	47.2	39.8	K
9.5	49.5	30.3	
8.7	56.7	36.8	K
8.6	59.6	3.1	B
9.3	26 18.7	19.3	
9.5	28.9	8.1	
9.5	46.8	54.4	
9.5	59.6	28.8	
9.4	27 23.9	55.4	
9.5	27.7	3.7	a
9.1	41.9	49.7	
9.3	54.2	28.4	
9.3	28 38.0	33.9	B
9.0	52.1	8.8	
9.0	54.8	47.3	
9.3	59.0	26.7	
8.3	29 6.8	19.7	K
8.8	9.8	9.3	
9.0	30 2.8	58.6	
9.5	31 0.8	44.9	
9.3	1.9	58.0	
9.2	22.7	1.7	
~~9.3~~	~~24.5~~	~~+.3~~	
9.3	33.5	55.2	
9.5	44.9	42.4	
8.3	49.5	27.7	K
9.5	54.6	0.2	
9.3	33 45.5	26.2	
8.3	34 57.2	32.1	
8.3	36 46.2	42.8	K
	+	+	
	30.96	*3.06*	

4341—4400

♒	22ˢ—23ˢ	−1°	
	′ ″	′	
8.5	36 51.0	17.7	
8.8	37 24.8	14.6	K
7.5	32.2	28.4	K
9.3	38.2	7.0	
8.2	52.4	56.2	L
7.8	38 22.2	42.1	K
9.3	39 38.8	48.6	
9.5	40 44.0	3.3	
9.5	41 7.2	59.3	K
9.3	14.8	14.1	B
7.5	43 16.5	20.5	K
9.3	26.8	2.3	
9.3	44 40.9	17.0	
9.0	46 5.2	18.6	B
7.5	51.2	48.7	K
9.3	56.9	5.7	
8.3	47 30.4	32.5	K
8.8	38.9	49.0	K
8.5	49 31.8	16.6	K
9.5	50 9.2	50.3	
9.3	48.0	52.4	B
8.8	54.5	21.8	K
9.3	51 18.8	52.4	
7.5	24.9	5.7	K
8.0	41.5	56.6	K
9.3	51.9	36.0	
9.4	59.7	0.4	
9.5	52 1.9	5.1	
9.0	2.0	41.8	
9.3	9.4	14.5	
9.3	28.0	34.7	B
9.5	36.2	50.4	
8.7	53 12.8	11.1	
9.3	14.1	32.8	
9.3	31.0	20.7	
8.7	54 34.2	59.0	
9.5	53.2	56.3	
9.3	55.0	4.6	
8.2	55 0.9	22.8	K
9.1	19.0	20.9	B
8.8	24.1	5.1	
7.7	42.5	11.8	K
9.0	56 9.8	2.7	
9.3	12.8	54.7	B
9.2	35.4	49.7	K
9.0	39.8	55.9	K
9.0	57 2.0	18.7	
9.5	29.0	38.3	
9.0	34.6	58.8	
9.0	58 20.6	18.0	
9.3	59 9.3	8.3	
9.4	38.4	46.9	B
7.2	0 20.2	4.2	K
7.5	59.2	17.3	K
9.0	1 13.7	59.0	
9.5	35.2	8.8	
9.2	2 16.0	37.3	B
9.3	44.0	33.3	
9.5	45.5	40.6	
9.3	3 38.2	52.7	
	+	+	
10pr.	*30.82*	*3.20*	

158ª

9.5	15	49.3	38.5	a

4233ª

9.5	54	26.5	44.8

4345ª

9.5	37	53.2	38.0

4401 − 4426					4427 − 4452					4453 − 4478					4479 − 4504					4505 − 4530				
	23ʰ		−1°			23ʰ		−1°			23ʰ		−1°			23ʰ		−1°			23ʰ		−1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	4	13.2	55.2	K	8.4	16	16.2	40.4	B	9.2	25	33.0	52.4	B	8.0	35	53.7	31.4	K	9.0	49	1.8	24.5	
9.5		18.7	56.6		9.5		22.7	50.7		9.0	26	14.0	50.0		9.5		58.2	2.5	K	9.0		24.8	18.7	K
9.5		21.4	17.3		8.8	17	2.7	46.3		9.0		22.7	35.6		9.5		59.0	51.7		9.2		46.3	27.6	K
9.5		27.0	15.4		9.3		19.2	23.9		8.7		41.9	12.8	K	9.5	36	17.4	45.5		9.5	50	16.3	3.6	
9.0	5	32.0	35.0	K	9.0		58.3	0.4	K	8.6	27	2.9	7.5	K	9.5		30.7	23.9	K	9.5		27.8	50.7	
8.7		36.9	13.5	K	9.4	18	41.0	3.7	B	8.8		57.8	26.5		9.5		57.7	54.5	*a*	9.5	51	0.3	53.4	
9.0	6	46.2	4.2	K	9.5		43.9	55.9		9.0	28	47.9	7.0	K	7.3	37	36.2	28.0	K	9.5		21.0	42.2	B
9.5	7	5.2	11.0		8.7		44.5	17.0	K	9.5	29	43.7	55.2	K	9.0		51.2	46.9	K	9.0		42.8	23.5	K
8.7		28.2	50.7	K	9.2		47.6	18.1	K	9.5		46.7	16.3		9.5	38	47.7	23.9		8.5		44.6	17.3	K
9.5	8	20.2	50.4		9.5	19	30.4	46.9		9.2		48.2	50.8	K	9.5	39	25.0	46.9		7.0	52	23.7	4.7	K
9.3		23.7	35.2		9.5		38.5	27.7	B	9.3	30	22.7	28.3		7.5	40	18.0	33.5	K	7.3		47.2	9.5	K
8.8	9	4.7	32.1	K	9.2		39.2	36.9	K	9.5		40.2	60.0		8.5		46.7	34.2	K	9.0	54	15.3	56.6	
9.5	10	7.7	37.6		9.0	21	5.7	48.7		9.3		43.7	38.0	*a*	9.2	42	39.3	6.7		8.7		18.0	0.3	K
9.5		11.0	37.2		7.5		20.7	37.3	*B*	9.0		49.2	39.3		9.5	43	4.3	18.7		9.0		49.5	17.6	K
9.3		31.2	15.0	B	9.5		32.4	20.0		9.5	31	27.2	32.1		9.5	44	59.0	45.6		9.5		52.8	10.1	
9.3	11	4.0	51.4		9.0		54.4	51.8	K	9.0	32	1.7	45.9		9.5	45	1.6	58.0		8.0	55	33.3	43.8	K
9.0	12	23.7	14.2		6.5	22	4.2	49.4	K	8.8		19.2	32.8		9.2		17.3	38.6	K	9.5		53.0	48.3	
9.5		47.7	5.0		9.3		45.7	54.5		9.5		26.7	21.5		9.5		30.8	7.4		9.5	56	40.0	6.6	
9.3	13	33.0	25.0	B	9.5	23	28.7	16.7		9.5		30.7	59.6		9.3	46	57.3	33.5		9.5		44.3	45.9	
8.7	14	55.8	11.1	L	8.2		34.7	23.6	K	9.0		34.2	32.3		9.0	47	9.8	23.9	*R*	8.7	57	14.8	52.4	K
9.0	15	0.7	3.2		9.3		52.7	0.8		8.2	33	16.9	10.2	*B*	9.5		13.8	25.6		7.0		39.8	18.4	K
9.0		6.2	31.8		9.5	24	23.2	6.6		8.8		28.7	32.4		8.5		26.6	4.4		9.5	58	2.8	37.7	
8.7		11.2	56.6	K	9.5		29.2	2.9		9.5	34	19.4	34.8	B	9.0		56.3	52.8	K	9.5		24.0	59.0	B
9.3		13.4	38.6		6.7		33.2	51.8	K	9.5		20.0	19.7	B	9.0	48	26.8	21.8		9.5		52.5	28.0	
9.3		34.0	18.1	*B*	8.7	25	18.7	38.4	K	9.0		29.7	53.8	K	9.2		31.7	6.4		9.5	59	44.5	10.0	
8.3		56.4	44.4	B	9.2		24.2	11.5	K	9.5		50.7	46.9		8.5	49	1.8	45.2	K	9.5		58.1	9.9	B
10pr.		*30.79*	*3.26*		*10pr.*		*30.78*	*3.29*		*10pr.*		*30.76*	*3.31*		*10pr.*		*30.74*	*3.33*		*10pr.*		*30.73*	*3.34*	

Zone −0°

1 — 20					21 — 40					41 — 60					61 — 80					81 — 100				
	0ʰ		−0°			0ʰ		−0°			0ʰ		−0°			0ʰ		−0°			0ʰ		−0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	0	12.3	37.9		8.3	6	38.5	50.5	L	9.2	11	44.3	37.9		9.5	18	33.7	27.6	B	9.5	25	16.5	43.5	
9.2		22.2	40.8	K	9.5	7	16.6	24.0		7.5		51.1	17.5	K	8.3		39.1	22.2		9.5		33.3	23.9	
9.0		29.9	2.1		9.4		23.8	33.9		9.5	12	2.7	54.0	B	6.2	19	12.2	51.7	L	9.3	26	16.0	2.1	
9.5		49.3	7.6		9.5		31.2	10.6		9.5		56.2	7.4		9.3	20	40.0	50.1		9.5		24.5	16.1	
9.5		50.3	7.3		9.4		56.0	33.0		9.2	13	2.3	17.4		9.4	21	15.4	9.0		9.2		26.2	59.8	B
7.3	1	26.6	7.0	K	9.2	8	19.4	41.1	K	9.2		2.4	41.6	*B*	9.3		18.9	2.3		9.5		38.3	17.6	
9.2		46.3	43.9	K	9.3		48.5	25.2		9.5		15.6	7.8		9.5		21.5	4.9	B	9.5	27	21.2	41.5	
8.7		59.1	43.9	K	8.7		52.9	45.0	K	9.5		40.6	37.7		9.5		43.3	53.7		9.5		49.1	8.3	B
9.5	2	30.5	5.4		9.5	9	12.3	25.2		9.5	14	10.8	19.6		8.3		44.5	45.9	K	9.2	29	14.2	5.5	
9.2	3	8.3	1.7	B	9.4		23.1	1.8		9.5		12.8	8.1	B	9.5		56.2	42.6		8.8		16.0	1.4	
9.5		38.0	56.0		9.3		36.7	48.1		8.3		26.3	48.6	K	9.5	22	1.5	49.9		9.0		51.9	49.5	
9.5	4	3.6	5.5		8.7		53.8	13.0	R	8.8	15	27.5	38.1	K	9.5		12.9	55.1		9.0	30	29.9	22.3	
9.2		14.4	41.0	R	7.7	10	3.4	29.6	K	9.5		42.0	19.7		9.5		43.0	6.1		9.2		59.9	34.8	
9.5		43.8	38.1	B	9.5		22.0	1.1		9.3		49.3	38.9		9.5		58.5	12.3		9.1	31	13.9	8.5	B
9.4		44.4	31.9	B	8.6		24.9	26.2	*K*	8.5		56.7	21.6	K	9.5	23	26.2	9.3		9.3		39.9	3.2	
9.6	5	49.5	53.4		9.3		35.6	20.6		8.3	16	24.0	41.2	K	9.0		28.3	57.9		9.3	32	6.7	57.3	
9.6	6	3.0	56.3		7.0		38.0	12.0	L	9.5		38.3	24.5		9.5	24	12.2	11.2	B	9.4		25.3	54.2	B
9.3		9.5	20.0	B	9.5		41.0	5.3		9.5	17	12.2	34.6		8.8		24.9	58.6	K	9.1	33	15.5	2.1	
9.5		17.0	17.7		9.5		54.0	17.1		8.5		14.6	35.7	K	9.5	25	4.5	4.5		9.3		23.2	51.9	
9.5		31.3	34.6		9.2	11	26.7	44.1	*B*	9.5		25.2	33.2		9.5		10.7	24.2		8.8		56.2	5.3	
10pr.		*30.72*	*3.34*		*10pr.*		*30.72*	*3.34*		*10pr.*		*30.71*	*3.33*		*10pr.*		*30.71*	*3.33*		*10pr.*		*30.71*	*3.31*	

101—160

	0ᵘ		−0⁰	
m	′	″	′	
9.0	34	17.9	41.5	
9.5		19.5	38.0	
9.1		31.0	49.1	B
9.0	35	3.1	53.1	
8.5		17.9	3.1	K
9.2		33.3	57.4	
9.3	36	56.3	51.7	
8.8		59.9	16.0	
6.8	37	44.0	31.7	L
7.8	38	28.2	13.2	K
8.8		36.2	18.8	*B*
9.3		50.9	51.3	
7.8	39	27.9	25.0	K
9.4		56.4	56.4	B
7.8	41	7.0	24.4	K
9.3		51.5	31.3	
8.8	42	9.5	13.2	
9.5		14.6	28.8	
9.3		18.5	45.6	
9.0		20.6	30.0	
9.3		58.7	28.7	
8.4	43	7.5	17.6	K
8.5		15.5	51.9	K
9.4		17.7	59.2	
9.5		55.2	30.0	
9.5	44	0.8	31.7	
9.5		44.8	15.7	
9.4	45	3.1	21.2	
9.5		17.7	55.7	
9.3		34.9	40.3	
9.5		43.7	37.2	
9.4	46	10.5	49.8	B
9.5		27.5	45.5	
9.5		29.2	27.4	
9.5		37.6	7.7	
9.5		37.6	16.2	
9.5		55.1	54.3	
9.5	47	43.1	46.2	
7.6	48	7.7	45.9	K
9.5		14.2	54.6	
8.9		55.7	23.6	
9.5	49	0.4	47.0	
9.4		24.5	58.0	
9.5		29.8	42.1	
8.1		34.2	20.0	K
7.5		47.7	27.0	K
9.5	50	40.2	7.3	
9.4		42.1	41.7	
8.4	51	41.5	55.7	K
9.0		42.1	14.1	
9.4	52	4.7	59.3	
8.5		10.6	6.6	
9.3		31.4	6.3	
8.9		37.3	24.4	
9.5	53	34.9	46.1	
8.9	54	28.6	21.9	K
9.5		35.8	7.3	
9.4		54.6	34.0	
9.3	55	29.0	28.0	
9.4		33.6	30.2	
10pr.		+ *30.70*	+ *3.27*	

161—220

	0ᵘ — 1ᵘ		−0⁰	
m	′	″	′	
9.5	56	35.0	14.9	
9.2		44.0	45.9	K
8.2		51.5	9.8	K
9.5	57	2.2	29.0	
9.5		11.9	32.2	
9.2		18.5	17.7	
9.5		22.4	25.1	
9.0	58	10.7	56.8	K
8.4		25.0	26.2	K
9.1		32.2	10.5	
9.5		56.9	13.1	
9.4	59	44.8	27.0	
9.2	0	17.8	1.1	
9.5		33.9	5.7	
9.5	1	3.2	3.5	
9.2		33.4	10.7	B
9.5	2	39.5	17.4	
9.4	3	3.5	24.3	B
9.4		7.6	47.0	
9.4		10.7	0.9	
9.5		30.6	22.2	
9.3	4	22.5	51.9	
9.5	5	11.1	24.8	
9.4		12.1	0.1	
9.5		36.7	20.1	
9.5		58.0	31.4	
9.4	6	47.3	7.6	
9.2		53.6	58.5	
8.8	7	5.5	37.1	
9.2		25.9	59.3	B
9.4	8	11.0	21.7	
9.5		12.8	18.5	
9.1		17.7	45.0	
9.4		54.2	18.0	
9.5		54.9	35.5	
8.5	9	41.0	28.0	
9.5		44.2	18.6	
9.4	10	3.3	2.1	
9.0		40.3	7.7	
9.5		44.6	21.2	
8.3	12	16.1	39.6	K
9.3		57.3	23.5	
9.3	13	9.2	55.9	
9.2		41.7	56.9	R
9.5		46.9	11.3	B
9.5		57.7	43.9	
9.0	14	2.2	54.6	
9.0		35.5	7.6	
9.5	15	14.2	35.0	
8.0		25.2	2.3	K
9.5		44.1	18.8	
8.5		48.1	10.4	
9.1	16	6.6	8.4	
9.5		15.2	44.9	
9.5		25.2	55.3	
9.2		32.7	30.1	
9.0		32.8	24.3	
9.4	17	5.2	37.2	
9.5		10.9	19.9	
9.4		23.4	27.1	B
10pr.		+ *30.69*	+ *3.19*	

221—280

	1ᵘ		−0⁰	
m	′	″	′	
8.5	17	38.0	29.5	K
9.5		48.3	53.8	
9.5	18	30.9	6.2	
9.1		46.2	6.7	
8.6		56.7	58.4	K
9.4	19	1.2	16.0	B
9.2		10.1	43.6	B
8.9		31.4	46.8	K
7.8		33.1	53.7	K
9.5		57.9	15.7	
8.2		58.5	41.7	K
9.5	20	6.3	5.4	
9.4		9.2	10.4	
9.4		24.6	8.0	
9.3		38.1	18.4	
9.2	21	9.4	35.9	
9.0		19.9	2.8	R
9.4	22	21.9	28.8	
9.5		23.6	10.3	
7.7		27.5	22.8	K
9.5		44.7	30.4	B
9.4		46.4	36.4	
9.5	23	30.9	9.5	
9.4	24	0.3	59.1	
9.0		40.6	8.5	
9.3	25	27.1	13.4	
8.3		33.8	38.6	K
8.5		53.5	27.0	K
9.0		54.8	51.3	
9.0	26	7.5	17.2	
9.0		52.7	55.1	
9.3		56.7	11.7	
8.0	27	10.7	30.6	K
8.3		38.3	44.0	K
9.0	28	25.3	37.4	K
9.5		48.3	12.0	
7.8	31	59.5	8.3	K
7.2	32	42.9	58.2	K
8.9		58.7	47.5	
8.9	33	25.8	19.7	B
9.5	34	4.0	2.1	
8.8		24.3	53.7	
9.2	36	13.8	0.5	
8.3		35.3	55.0	
8.5	37	11.1	23.5	
9.5		39.7	4.9	B
9.3	38	2.2	0.5	
9.0		29.3	29.1	
9.0		30.9	16.1	
8.3		54.7	38.8	K
8.5	39	12.2	38.8	K
8.8		17.7	32.5	K
9.5	40	6.6	12.4	B
8.0		10.2	33.9	K
9.5		12.6	18.0	
9.5		30.1	1.2	
8.5		53.1	16.2	K
9.5	41	6.3	5.1	
9.0		51.6	7.5	
9.5		59.6	38.1	
10pr.		+ *30.68*	+ *3.10*	

281—340

	1ᵘ — 2ᵘ		−0⁰	
m	′	″	′	
9.0	42	31.3	55.9	
9.3	43	35.8	7.9	
9.3		48.7	18.6	
9.5	44	8.5	31.9	B
9.5		34.0	1.5	
9.4		58.0	10.6	B
9.5	45	0.7	10.8	B
9.0		55.1	20.0	K
9.5	46	13.7	54.1	
9.0		38.1	31.5	
9.3	47	3.9	13.0	
8.8		32.1	30.0	
9.0		35.5	2.5	
8.7		51.2	7.2	
9.3	48	1.6	49.5	B
9.5		44.2	46.5	
9.2		46.0	56.0	
8.7	49	30.5	57.3	K
9.3	50	29.2	58.9	
9.5	51	9.7	0.6	B
8.3		43.4	11.0	K
8.5	52	1.9	57.4	K
9.3		4.9	28.4	
8.5	53	17.9	20.2	
8.3	54	2.9	14.2	K
9.3		36.9	58.1	
6.0	55	46.9	34.3	K
9.0	56	3.9	22.9	
8.5		15.4	43.4	K
9.0		34.9	34.4	
9.5		38.9	25.8	
9.3	57	14.9	42.0	
9.3		24.9	57.6	
8.5		43.4	41.7	K
8.0		51.9	23.2	*B*
9.3	58	11.9	11.9	
~~9.5~~		~~29.0~~	~~9.8~~	
7.3	59	6.9	40.2	K
8.8		38.4	21.1	
9.0		48.6	53.7	
9.5	0	17.0	43.0	
9.5		48.5	1.2	
9.5	1	31.5	26.5	
9.3		44.0	13.4	
9.5	2	4.8	20.4	
8.3		48.0	11.7	K
8.8		57.5	45.5	K
9.3	3	59.3	0.4	
8.5	4	18.5	27.4	K
9.2		23.0	34.0	
9.2		54.2	8.4	
9.5	5	1.5	22.0	B
9.4		15.2	4.4	B
9.5		26.0	35.2	
8.7	6	9.0	41.2	
9.2	7	17.8	36.1	B
9.3	8	6.1	0.8	
9.0		10.5	16.2	
9.5		14.6	0.8	
9.0		50.0	47.6	K
10pr.		+ *30.66*	+ *2.91*	

341—400

	2ᵘ		−0⁰	
m	′	″	′	
9.4	8	51.0	19.7	B
9.2	9	20.9	37.8	
*8.2	10	20.0	50.2	K
9.0		47.5	33.9	
8.3	11	15.5	20.7	K
9.5		28.5	13.0	B
8.5		36.0	36.0	K
9.3	12	32.0	14.8	
9.0		37.2	50.6	B
8.5		43.9	57.3	
9.5		57.1	4.1	
9.3	13	16.6	0.7	
9.5		23.0	57.8	B
7.8	14	17.5	48.7	K
5.5		33.5	16.5	K
8.8		44.7	55.1	
8.5		59.0	28.0	K
9.0	15	18.0	14.8	
9.5		30.1	30.9	B
8.5	17	43.0	1.1	P
*9.5		59.6	3.4	B
*8.8	19	5.1	2.6	
9.3		44.0	29.8	
9.3	20	29.5	14.8	
var		35.0	26.3	K
9.3		37.0	15.5	
8.3	21	2.0	53.2	K
9.1		59.5	21.4	*a*B
9.4	22	14.8	36.1	B
9.5		19.0	21.6	
9.1		20.4	14.0	B
9.1		22.4	33.2	*B*
8.8		42.4	32.7	B
8.3		49.0	44.1	K
8.8		52.5	20.0	
9.5		55.9	33.4	
9.5	23	4.0	34.5	
6.5		20.8	22.8	K
9.5	24	24.5	4.4	
9.5		51.9	0.5	
8.8		56.5	57.0	
8.5	25	52.0	29.4	
9.2	26	9.4	4.4	
9.0		34.8	40.6	K
8.5		56.5	17.2	K
9.2	27	16.7	1.6	
8.5		29.4	59.2	L
9.4		37.4	48.9	B
9.0		42.0	56.5	
9.2		44.0	27.3	B
9.4		52.8	50.1	
9.3	28	0.7	31.2	
9.5		9.5	23.5	
8.4		24.3	59.1	K
8.8		32.2	28.3	K
9.5	29	18.6	24.2	
9.2		23.2	9.7	
9.2		34.8	10.6	
9.4		36.0	49.9	
9.5		38.9	2.1	
10pr.		+ *30.65*	+ *2.72*	

343ᵈ				
9.5	*10*	*24.8*	*49.1*	*a*
361ᵈ				
var	*18*	*34.8*	*50.0*	*L*

401—460

m	2ª		—0°	
	′	″	′	
8.9	29	51.8	50.0	K
9.5	30	32.0	41.7	
9.4		45.8	52.0	
9.4	31	17.0	21.1	
9.5		20.0	48.1	
3.7	32	3.2	17.8	K
8.2		26.3	28.6	K
8.6		47.8	53.5	K
9.0	33	54.1	44.1	
7.3	34	3.9	3.8	K
8.1		33.2	4.1	K
neb.	35	16.7	38.4	
9.3		18.3	37.7	
8.5		52.3	32.2	B
8.4	36	11.0	58.0	
9.3		14.5	22.7	
9.2		17.4	3.8	
8.6		20.8	24.6	
9.4		24.0	24.4	
8.5	37	4.0	14.4	
9.5		18.7	7.2	
8.4		31.5	37.2	B
9.5		35.8	11.2	B
8.4		35.8	48.4	K
9.5		55.9	55.2	
9.5	38	5.9	42.4	
9.5		15.0	23.6	
9.4	39	7.5	35.3	
9.3		11.2	39.2	B
9.5		55.8	1.7	
8.8		59.0	50.7	
9.5	40	1.6	16.7	
9.0		12.5	17.5	
9.5		36.5	22.9	
9.4	41	22.1	54.8	
9.0		56.1	37.8	
9.0	42	30.0	50.8	
9.5		53.0	40.4	
9.5		54.1	49.8	
9.5	43	6.9	11.3	
9.3		21.5	3.4	
9.0	44	1.6	39.3	
8.0		5.9	30.7	K
9.1		16.2	4.6	
9.0	45	51.6	44.8	
8.8		59.3	35.3	
8.7	46	13.2	31.4	
9.5	47	1.1	54.2	
9.4		6.0	51.1	
6.8		21.8	38.2	K
7.7		48.9	8.5	K
9.5		56.9	34.0	
9.4	48	3.9	52.7	
8.6		29.3	4.4	K
9.5		38.9	0.4	
8.5		43.9	47.9	K
8.8		47.4	4.4	K
9.0		50.2	28.9	
9.3		56.5	15.6	
7.5	49	44.6	8.3	K
		+	+	
10pr.		30.64	2.56	

461—520

m	2ª — 3ª		—0°	
	′	″	′	
9.5	49	57.9	33.0	
9.5	50	10.3	13.5	
9.4		11.4	1.3	
8.7		25.7	10.1	K
8.8	51	2.8	8.8	K
9.3		22.3	10.8	
9.3		53.1	34.8	
9.3	52	9.3	40.1	
9.3		27.4	5.6	
9.4		37.0	13.5	
8.6		42.3	20.3	K
8.6		53.8	53.5	
9.0		55.1	6.1	
9.4		56.0	20.3	
9.5	53	1.0	11.8	B
9.3		6.0	15.0	
9.3		8.1	13.0	
9.3		10.4	11.6	B
9.5		12.5	22.4	
8.6		18.1	42.2	K
9.5		38.6	27.0	
8.8	54	15.8	18.6	
8.9		33.4	5.0	
9.5		36.7	46.5	
9.0		40.6	29.0	
9.0	55	11.9	8.8	
9.5	56	13.6	36.2	
9.4		27.4	54.5	B
9.3	57	18.5	31.0	
9.5		32.0	35.3	
9.0		34.6	50.8	
9.5	58	2.5	34.4	
9.5		17.2	2.5	
9.5	59	53.1	33.7	
9.0	0	18.7	42.4	
9.3		42.8	15.1	
9.3	2	26.5	19.7	
7.3	3	10.0	20.0	K
9.5		16.6	23.7	
9.5	4	21.6	50.7	
9.3		27.3	43.4	
9.5		33.1	3.2	
8.0		38.5	25.9	K
9.0		42.4	37.0	
9.0		45.7	12.6	
8.5		46.0	45.7	K
9.2	5	11.1	54.2	
9.3		18.4	1.5	
9.3		19.0	27.1	
8.5		29.4	54.7	K
8.3		55.7	22.4	
9.5	6	22.1	51.5	
9.5		27.9	5.9	
8.9		40.0	7.8	K
9.3		59.0	4.4	
9.0	7	2.6	51.7	
8.5	8	45.7	4.8	
9.5		46.7	53.8	
9.0		58.8	57.6	
9.5	9	38.9	16.1	
		+	+	
10pr.		30.64	2.38	

521—580

m	3ª		—0°	
	′	″	′	
9.2	9	42.0	41.5	
9.5		58.0	26.7	
8.5		59.1	42.0	
9.5	10	53.8	49.0	
9.0	11	57.0	29.1	
9.4	12	3.7	41.4	B
9.3		30.7	24.0	B
9.3		52.1	39.6	
9.3	13	12.6	10.9	
8.1		21.1	41.5	K
9.3		44.2	49.3	
8.6		44.8	53.9	K
8.5		47.8	27.4	K
9.3	14	4.5	8.6	
9.3		45.5	51.3	
9.5		46.0	7.0	
9.5	15	42.8	38.5	
9.5		43.0	57.6	
9.2	16	23.8	30.0	
8.7		50.1	15.9	
9.5	17	0.2	58.6	
9.3		9.7	31.8	
9.0		10.5	11.2	
9.3	19	15.7	26.4	
9.3		22.7	24.1	
7.3		25.1	28.2	K
9.5		35.9	11.9	
9.5		37.0	3.2	
9.3		43.9	37.9	
9.5	20	31.2	36.6	
9.5	21	27.5	30.7	
8.3		29.6	54.9	K
8.9		47.2	4.8	
9.5	22	10.2	14.4	B
9.0		49.5	59.3	
9.5		53.4	31.7	
9.5	23	25.4	42.7	
9.5		35.7	56.4	B
9.2		37.8	37.5	
7.6		40.8	58.4	K
8.5	24	43.5	11.9	K
8.1	25	25.5	59.3	K
8.4	26	2.8	22.7	K
9.5		14.0	39.0	
8.6		16.3	52.7	K
9.0		49.6	20.4	
9.5	27	6.0	46.3	B
9.5		32.3	26.4	
9.3	28	17.6	54.9	
9.5		42.4	26.0	
8.9	29	16.0	47.1	K
4.2		30.1	3.7	K
9.5		39.8	26.2	
9.0		43.5	50.1	
9.2	30	11.0	10.1	
9.3		13.5	47.1	
8.0		24.8	20.6	K
9.3	31	7.9	54.8	
8.3		20.3	59.4	
9.5		42.3	47.1	
		+	+	
10pr.		30.63	2.14	

581—640

m	3ª		—0°	
	′	″	′	
9.3	32	38.3	20.5	
9.3	33	6.5	23.8	
9.4		29.1	58.3	B
8.3		59.5	41.6	K
7.8	34	13.9	38.1	K
9.2	35	26.6	13.6	
8.7		49.8	32.9	
9.5		53.7	56.0	
9.5		57.8	43.4	
8.0		58.4	2.6	K
9.2	37	5.7	45.7	
9.1		26.0	53.3	K
6.2		32.7	45.9	K
7.8	38	28.5	14.4	
9.5		53.9	49.1	
9.2	39	15.3	3.5	
9.2		16.8	38.1	
8.8		22.4	19.5	
9.3	40	5.1	48.4	B
8.6		34.1	4.6	K
8.8		44.7	21.0	
6.5	41	13.4	13.4	K
9.2	42	5.8	28.0	
9.2		6.7	44.9	
8.2		7.8	48.6	K
9.0		22.0	7.6	
9.0		50.2	22.6	
8.2	43	27.7	37.5	
8.8		42.5	27.7	
8.9	44	9.3	6.5	
8.8		27.0	57.8	
9.2	45	7.6	28.5	
9.0		29.2	26.4	
8.8		52.6	55.4	
8.8	46	21.5	30.3	?
8.5		48.0	34.7	
8.3		50.3	8.4	K
8.3	47	28.4	25.1	K
9.3		39.0	46.1	
9.3	48	19.1	18.4	
9.5	49	20.4	43.0	
9.0		43.3	3.2	
9.5		54.0	49.4	
9.0	50	34.1	24.9	
9.5	51	35.3	44.0	B
8.5	52	1.6	49.3	B
8.8		22.5	26.4	
9.3	53	1.2	31.2	
9.5	54	40.0	22.1	
8.4		47.5	19.1	K
9.0		54.3	20.2	K
6.2	55	11.6	39.8	K
8.5		35.2	28.0	K
9.3	56	10.3	18.7	
9.0		28.4	0.3	
8.3	57	8.2	8.5	K
9.0		18.1	23.0	
9.3		25.0	0.1	
8.8		33.8	36.0	
7.5		55.5	57.5	K
		+	+	
10pr.		30.62	1.87	

641—700

m	3ª — 4ª		—0°	
	′	″	′	
8.5	58	9.8	12.8	
8.3		44.5	24.8	
9.5	59	1.6	31.1	
9.3	0	7.1	46.5	
9.5	1	5.3	7.6	B
9.3		29.3	50.0	
9.5		44.4	55.6	
8.0		45.4	13.5	K
8.8	2	19.7	16.3	
9.4		23.7	42.6	B
9.5		25.0	47.7	
9.0	3	18.0	17.7	
7.2	4	9.7	47.9	K
8.8		20.6	16.3	
9.3	5	19.7	44.3	
9.0		39.0	28.5	
9.3		39.7	16.9	
9.0	6	19.2	35.1	
8.7		38.1	52.0	K
9.2		48.2	43.3	K
9.5		58.0	50.7	
8.8		59.4	43.3	K
9.0	7	37.6	54.7	
9.4		47.4	0.9	
9.5	8	5.0	50.2	
7.5		14.4	22.6	K
9.0		35.0	48.6	
8.0	9	10.0	55.8	B
9.5		25.9	59.3	
9.2		26.4	17.8	B
9.2		42.9	4.7	
9.1		48.8	19.5	B
9.3		58.5	14.8	
*9.4	10	12.0	50.4	B
9.3		22.0	31.8	B
9.4		37.5	52.1	B
8.5		43.5	29.5	
8.5		49.0	8.0	K
9.2		52.0	48.6	
8.6		52.4	37.3	K
8.9		57.3	39.7	B
8.7	12	27.9	6.1	
9.5		46.3	45.9	B
9.4	13	20.6	4.0	B
8.0		27.1	16.0	K
9.5		42.1	35.5	B
6.3	14	2.9	26.2	K
9.0		33.1	55.8	
9.0		35.6	16.0	
8.0	15	7.8	53.9	K
9.3		11.5	32.4	
9.3		13.8	6.4	
8.8		14.2	46.3	
8.8		45.5	17.6	
9.0		59.6	27.8	
8.7	16	45.8	5.0	
9.0	17	16.8	40.8	
9.0		29.0	29.9	
9.0		40.9	0.5	
9.5		45.9	57.0	
		+	+	
10pr.		30.62	1.55	

673ª
9.5 | 10 | 4.8 | 31.7 | B

701—760					761—820					821—880					881—940					941—1000				
	4ᵘ		−0°			4ᵘ		−0°			4ᵘ—5ᵘ		−0°			5ᵘ		−0°			5ᵘ		−0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.3	18	26.1	23.2		9.0	36	46.8	8.6		9.0	53	17.0	52.3		9.5	5	35.5	33.7		9.0	17	22.5	58.0	K
7.5	19	5.5	50.2	K	8.3		57.9	19.1		9.5		21.9	22.5	B	9.0		35.7	16.0	K	9.5		29.0	28.8	
9.0	20	1.2	30.5		9.3	37	51.9	10.8	B	8.9		25.3	43.1	B	9.5		53.5	45.1		9.3		41.5	45.5	
9.3		6.0	4.8		9.0	38	49.0	39.5		9.5		32.1	35.4	B	9.4		59.6	52.5		9.5	18	5.3	28.3	
9.3		12.7	5.6		9.3		56.7	14.1		8.8		45.7	22.0		9.4	6	3.2	58.5	K	7.3		7.7	40.8	K
9.3		32.2	57.2		9.3	39	3.9	57.7		7.8	54	3.0	54.3	L	9.5		21.0	43.4	B	9.1		39.1	53.5	*a*
9.0	22	34.3	27.8		9.5		11.2	0.8		9.5		37.2	5.9		9.5		26.7	32.3		9.5		46.9	24.3	
9.0		45.2	28.5		9.3		21.4	57.4		9.0		57.9	48.3		9.4		34.7	38.2		9.5	19	10.6	5.5	
9.0	23	2.9	55.4		9.4		37.5	49.1	B	9.5	55	14.0	36.3		9.5	7	1.6	15.1		9.2		23.9	45.9	
7.8		19.8	12.4	K	9.5		42.6	29.8		9.3		48.2	21.0		7.0		13.1	43.9	K	9.4		27.4	17.8	
9.3	24	4.2	38.4		8.3	40	17.2	21.3	L	9.4		56.2	12.9	B	9.5		36.4	28.4		9.0		33.6	10.6	
8.7		19.2	59.9	K	9.3		21.0	27.9		9.3	56	0.4	21.8		8.5		57.5	6.9	K	9.2		39.5	29.6	*a*
5.0		28.6	21.9	K	9.3		38.2	1.7	B	9.3		5.2	37.0		9.5	8	5.0	24.8		9.3		50.5	10.4	
9.3		34.8	8.9	*B*	8.3		51.8	38.8		9.5		9.2	8.7	B	9.4		11.0	18.8		9.3		59.3	1.0	
9.3	25	14.2	4.3		9.5	41	5.4	29.2	B	8.3		43.6	51.5		9.3		15.0	7.0		9.3	20	9.0	45.6	
8.5		33.8	28.6	L	9.5		27.2	32.7		9.3	57	6.7	19.7		9.4		29.7	13.0		9.0		11.9	31.6	
8.8		42.2	22.3		8.5		33.8	37.8		9.5		25.9	41.0		9.5		33.5	50.1		9.1		14.7	6.9	
9.5	26	1.4	52.1		9.0		46.0	13.5		9.1		38.7	57.8	B	9.3		34.8	41.4		8.8		18.0	23.0	
9.3		11.4	30.8		9.0		48.1	51.7		9.5	58	6.0	48.7		9.5		41.9	37.3		9.5		40.9	34.5	
9.3		15.0	45.3		9.5		50.3	3.4		9.5		26.4	29.0		9.0		44.1	56.1	K	7.0	21	1.4	5.8	L
9.4		44.0	20.1	B	9.3	42	7.2	13.5		8.9		31.6	1.3		9.5		53.0	28.8		9.2		2.0	49.3	
8.9		49.3	27.5		8.3		8.5	53.1	K	9.5		41.6	32.4		9.5		55.0	23.2		9.5		5.4	31.5	
9.3	27	7.3	3.5	B	9.5		44.4	56.9		9.2	59	2.1	22.0		9.5		57.3	28.0		8.9		16.8	34.9	
8.5		27.3	37.1	K	9.3	43	0.5	2.5		9.4		34.4	59.8		9.5	9	1.3	20.0		8.9		29.0	43.6	
9.1		33.9	59.0		7.5		25.2	20.8	L	9.1		37.3	59.7		9.1		5.7	25.4		9.5		39.5	47.3	
8.8		36.2	37.4	K	8.8		29.1	54.5		* 8.6		40.0	5.6	K	9.4		13.8	18.3	B	9.2		43.0	49.3	
9.3		54.0	46.8	B	8.5		33.2	8.8		9.4		52.7	3.0		9.5		41.7	17.0		9.4		49.2	17.5	
9.0	29	5.2	36.7		8.0	44	4.8	48.0	K	9.5		53.0	19.7		9.5		48.6	27.3		9.2	22	2.6	9.3	L
9.0		9.4	47.2		8.5		14.8	20.0		8.7	0	1.1	59.3	K	9.0	10	2.2	30.0		8.5		13.9	8.0	L
8.3		29.0	24.5		8.5		44.0	12.8	K	9.5		4.0	43.8		9.5		12.9	7.0		8.2		18.3	56.3	P
9.5		36.9	55.5		9.3		47.7	21.2		9.5		8.3	9.6		8.9		19.5	31.8		9.4		23.7	30.9	B
8.4		54.6	1.1		8.8	45	5.7	13.4		9.5		9.1	20.7	B	9.0		30.1	26.4		9.4		33.9	22.3	*R*
8.5	30	24.3	27.9	K	8.4		25.4	7.7		9.5		24.4	20.9	B	7.5		35.6	11.5	L	9.4		35.4	33.7	
8.8		31.0	41.5		9.5	46	7.0	14.9		9.0		43.7	47.9	K	9.5		41.0	7.7		9.4		57.0	32.5	
9.0		40.2	57.2		9.3		50.8	20.4		9.1		45.2	28.2		9.5		51.6	54.1		9.5	23	5.5	25.7	
9.5		49.0	12.1		9.0	47	1.8	27.4		9.5		45.7	10.3		9.5		55.3	45.8		9.0		7.1	58.0	K
9.5	31	8.0	31.4		9.2		18.0	16.6	*B*	9.5	1	3.3	25.3		9.5	11	10.1	3.3		8.8		21.0	28.6	K
9.5		11.0	12.7		9.4		33.2	26.0	B	9.3		4.9	33.0		9.5		45.6	11.7		8.6		23.6	4.9	K
8.8		15.8	42.4	K	8.0		39.5	47.1	K	9.5		8.3	23.8	B	9.5		51.4	46.2		9.4		54.9	18.5	
9.3		17.8	12.4		8.7		49.3	4.6		9.5		53.8	49.1		9.3	12	7.4	44.4		9.3		55.4	36.2	
9.3		21.0	50.7	K	8.4		53.2	21.4		9.5	2	8.2	39.0		9.5		28.3	27.3		9.0	24	17.3	0.1	
8.8		30.2	6.5		8.5		57.6	35.6	L	9.5		11.9	5.9		9.5		41.6	17.8		8.0		35.4	23.7	K
7.7	32	5.1	23.0	K	9.3	48	6.0	59.0		9.5		17.0	46.3		9.5		56.5	15.8		*var?*		36.7	24.6	K
9.5		17.5	15.8		9.0		14.6	42.5	K	9.5		20.0	24.9		9.5	13	9.9	51.4		9.2		40.3	31.8	K
9.3		19.5	23.3		9.3		25.0	50.7		9.5		23.0	26.9		9.5		25.2	26.7		9.2		44.6	45.5	
8.5		43.8	43.5	K	8.8		38.0	31.9		9.2		32.0	48.3	K	9.4		58.0	45.1		7.5	25	12.8	5.8	K
9.5	33	36.6	42.5		8.3	49	39.4	0.7	K	6.7		41.2	45.8	K	9.4	14	1.1	19.3	B	9.5		26.5	13.5	
8.8		57.0	41.2		9.3	50	2.2	21.8		9.4		43.6	28.1	*B*	9.5		3.6	20.6		8.6		28.2	49.1	
9.3	34	13.7	14.9		9.3		4.1	47.2		9.4	3	14.7	33.6	B	6.4		8.2	33.7	K	8.9	26	1.3	53.2	
9.3		25.1	14.9		8.8		49.0	32.6		9.0		18.9	7.7	K	4.8		22.0	31.8	K	9.0		3.8	32.3	
9.5		38.1	38.6		8.5		49.1	46.8		9.5		20.0	35.0		9.5	15	4.4	43.9		9.3		13.2	22.1	B
9.3		41.8	57.6		9.2	51	8.8	15.9		9.0		30.9	10.5	K	9.5		13.9	34.4		8.8		20.8	8.0	K
9.5		42.9	3.7		8.8		12.0	4.4	K	9.5		42.0	50.2		8.9		17.7	0.5		8.8		26.9	10.4	K
9.3		44.1	42.5		9.3		14.5	10.8		9.5		49.7	35.1		9.3		29.3	8.2		9.4		29.4	12.6	B
9.5		47.6	39.0		8.5		17.0	55.3		9.0	4	17.5	58.9		9.5	16	6.9	11.4		9.4		31.2	21.1	
9.3		55.4	2.2		8.8		27.7	27.0		9.2		26.3	51.9		6.5		16.7	17.6	L	8.8		37.2	34.5	
9.4	35	1.2	10.4	B	9.3	52	9.8	20.8		8.7		59.4	9.4	K	9.5		41.7	28.6		9.1		41.1	22.3	*B*
8.0		34.3	51.9	K	8.3		51.9	23.5	K	9.1	5	2.9	40.5		9.5		42.3	14.8		9.3	27	1.6	29.4	B
9.3		53.5	41.9		9.3	53	11.0	11.6	*a*	8.0		12.6	5.3	K	9.5		50.9	21.1		9.0		1.7	52.2	
9.5		59.6	21.4		8.5		15.5	14.2		9.5		27.3	30.0		9.5	17	3.9	10.1		7.7		5.0	6.8	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.61*	*1.28*		*10pr.*		*30.61*	*1.08*		*10pr.*		*30.61*	*0.87*		*10pr.*		*30.60*	*0.72*		*10pr.*		*30.60*	*0.55*	

846ᵃ				
9.6	*59*	*46.1*	*26.4*	*B*

m	5ᵐ ′ ″	−0° ′		
9.5	27 5.7	48.2		
8.9	8.9	29.0	D	
9.3	13.7	59.4		
9.5	31.4	42.1		
8.2	31.7	12.9	K	
9.0	37.7	55.3		
8.6	43.4	21.5	K	
9.3	47.8	55.5	*a*	
8.3	50.8	49.8		
9.5	59.7	28.1		
8.9	28 9.8	0.5		
9.5	11.6	35.5		
9.5	20.9	10.7		
9.5	31.3	23.6		
9.5	33.1	52.6		
9.3	41.6	24.5		
8.5	43.3	53.0		
9.2	53.4	23.6		
9.5	29 5.2	55.1		
9.5	5.9	40.7		
9.5	16.0	55.6		
9.4	21.0	28.5		
8.8	34.9	47.3		
8.9	47.6	17.3	K	
9.0	47.8	34.8		
9.3	51.3	19.6	B	
9.1	30 3.0	47.4		
8.9	5.9	20.0	B	
9.3	13.6	58.3		
9.5	21.0	26.9		
9.0	24.6	51.6	K	
9.5	30.0	10.0		
9.2	31.1	16.4	K	
8.2	41.6	15.9	K	
9.1	44.6	15.9	K	
9.0	31 6.7	13.8	K	
9.5	32.2	3.6		
9.5	51.1	57.1		
9.5	58.0	50.4		
9.5	32 10.0	28.5		
9.5	19.6	11.0		
9.5	21.0	31.9		
9.5	43.4	28.3		
8.5	44.3	47.1	K	
9.5	52.4	2.0		
9.4	54.4	49.6	B	
9.5	33 2.1	51.0		
9.5	7.9	27.7		
9.5	10.9	11.7		
9.5	14.5	22.4		
9.5	23.3	56.2		
9.5	23.9	8.8		
9.5	34 0.0	23.7		
9.5	15.7	1.3		
9.5	30.3	23.8		
9.5	32.3	38.2		
9.5	46.6	47.6		
9.5	50.4	18.2		
8.1	35 8.6	5.7	K	
8.9	27.0	3.0	K	
10pr.	+ *30.60*	+ *0.43*		

1001—1060

m	5ᵐ ′ ″	−0° ′		
9.0	35 29.5	3.6	K	
9.5	42.3	47.3		
9.5	52.0	42.0		
9.4	36 13.4	13.0		
9.5	17.4	52.5		
9.4	23.4	25.4		
9.5	46.3	1.7		
9.5	50.7	17.2		
9.5	59.0	29.8		
9.3	37 4.6	41.2	B	
9.5	7.7	25.9		
9.5	13.3	26.0		
9.1	23.8	7.2		
8.7	27.7	43.8	*R*	
9.5	38 0.6	5.5		
9.5	4.7	18.6		
9.3	38.4	1.3		
9.5	49.2	32.2		
9.5	59.5	26.3		
9.2	39 2.2	43.9		
8.9	3.2	49.8		
9.2	32.4	57.0		
9.5	51.5	4.4		
9.5	40 3.5	32.3		
9.5	33.4	59.7		
8.6	46.8	48.0		
9.5	50.7	4.8		
9.0	54.2	42.7		
8.0	41 3.5	49.1	L	
9.5	16.5	44.6		
8.5	32.0	42.8	K	
9.5	44.0	46.3		
9.5	59.0	46.9		
9.5	42 2.6	0.3		
8.0	9.6	44.4	K	
9.5	15.0	48.5		
7.8	18.5	23.9	K	
9.2	27.5	13.9		
9.5	38.0	2.5		
9.5	46.7	18.2		
9.5	49.1	47.7		
9.5	43 14.5	25.0		
9.5	34.9	55.8		
9.5	34.9	0.4	B	
9.4	45.7	2.8		
9.3	44 12.6	28.1		
9.1	37.5	15.1		
9.5	49.7	57.4		
8.9	59.9	57.4	K	
9.5	45 31.8	29.9		
9.5	46 9.4	33.8		
9.5	35.0	36.5		
9.5	45.2	47.4		
9.1	47 28.3	15.4		
8.1	39.2	31.4	K	
8.5	42.7	57.6	K	
9.3	49.0	15.9		
9.5	50.3	5.8		
9.5	48 6.3	23.7		
9.5	8.5	47.2		
10pr.	+ *30.60*	+ *0.27*		

1061—1120

m	5ᵐ − 6ᵐ ′ ″	−0° ′		
9.5	48 11.0	41.8		
8.6	28.1	54.5		
9.5	43.9	30.7		
9.2	49 28.2	24.5		
9.5	35.5	20.4		
9.4	50 3.2	57.2		
9.5	16.0	47.7		
9.5	26.7	5.0		
9.5	43.8	5.2		
9.5	51 19.7	5.8		
9.5	25.5	29.5		
9.5	52.0	26.3		
9.5	52 6.0	19.3		
9.5	18.0	27.5		
9.5	33.0	20.1		
9.5	38.9	2.9		
8.0	44.2	31.0	K	
8.6	53 1.2	41.5	K	
9.3	10.6	5.0		
9.5	39.2	34.4		
9.5	54 34.5	0.7		
9.5	41.5	55.7		
9.4	51.1	29.8	B	
8.9	51.7	5.5	K	
9.5	55 5.5	50.7		
9.1	13.1	28.2		
9.1	16.8	51.5		
9.5	22.3	17.8		
9.0	25.7	56.3		
8.0	50.7	35.3	K	
9.5	56 19.7	0.8		
9.4	25.6	19.5		
9.4	26.1	58.6		
8.7	38.2	12.7		
9.5	39.5	27.4		
9.5	47.0	42.7		
9.5	49.5	32.5		
9.5	49.5	34.7		
9.5	52.5	21.3	D	
9.5	57 3.0	36.8		
9.5	9.8	26.3		
9.5	25.0	38.9		
9.5	33.2	40.5		
8.5	58 8.5	31.7		
9.4	9.8	13.7		
9.5	19.7	2.3		
9.5	42.7	24.7		
9.3	48.3	43.2		
9.5	56.0	5.3		
9.5	58.5	24.1		
9.3	59 0.3	45.3		
8.0	3.6	57.8	L	
9.5	11.6	41.1		
9.5	24.0	2.8		
9.5	30.0	6.3		
8.8	31.4	12.6	K	
8.9	56.5	53.4	K	
9.5	0 2.0	39.7		
9.4	9.9	22.0		
9.2	12.1	59.1		
10pr.	+ *30.60*	+ *0.06*		

1121—1180

m	6ᵐ ′ ″	−0° ′		
9.5	0 44.6	42.3		
9.5	45.0	38.1		
9.3	51.7	21.2		
9.3	1 4.0	32.7		
9.5	11.0	18.3		
9.5	12.7	25.1		
9.5	17.5	0.5		
9.5	26.7	56.9	B	
9.5	47.6	9.6		
9.5	55.0	30.6		
9.5	58.0	4.0		
8.5	2 13.5	22.7	K	
8.5	39.7	17.3	K	
9.0	42.0	33.1		
9.5	44.0	59.8		
8.8	51.2	35.7		
9.0	52.3	12.3	K	
9.5	52.7	55.0		
8.8	3 4.4	12.7	K	
9.5	27.0	41.6		
9.5	35.5	26.3		
9.2	53.1	12.8		
9.5	4 1.3	14.9		
8.5	11.7	44.7	K	
9.5	22.0	56.5	*B*	
9.2	23.7	31.9		
9.5	33.3	26.4		
9.3	37.8	17.9		
9.5	38.5	49.7		
9.5	39.3	53.3	D	
8.8	49.8	16.0		
9.5	57.6	24.6		
9.3	5 4.0	21.8		
9.0	18.8	9.8		
9.0	51.1	55.9		
8.8	57.5	28.3		
9.5	6 1.0	3.1		
9.5	1.2	49.4		
9.0	11.7	34.0		
8.5	15.9	16.2	K	
9.4	18.6	42.2	B	
9.5	21.8	7.6		
9.5	39.3	5.6		
9.5	42.5	34.5		
9.5	46.5	26.9		
9.4	51.7	57.2		
8.7	7 23.2	30.3	K	
8.3	28.3	22.5	K	
9.5	29.7	47.6		
9.5	43.0	46.1		
9.5	43.2	21.6		
9.4	44.5	59.2		
9.4	45.8	6.4		
6.5	8 12.5	27.6	K	
9.5	12.8	8.5		
9.5	49.5	14.9		
8.8	9 25.3	5.4	K	
9.5	28.1	50.8		
9.5	28.8	54.4		
9.3	37.3	27.8		
10pr.	+ *30.60*	− *0.07*		

1181—1240

m	6ᵐ ′ ″	−0° ′		
9.5	9 42.7	0.3		
9.3	54.3	13.7		
9.5	59.5	51.3		
9.5	10 3.7	45.3		
9.5	15.7	54.8		
9.5	22.2	11.4		
8.5	43.8	19.6		
9.4	48.6	42.6		
9.5	59.9	25.4		
9.2	11 15.4	38.0		
9.5	24.7	16.7		
9.1	33.7	35.5		
9.5	38.4	31.7		
8.8	53.2	14.3		
7.9	59.4	51.6	K	
9.5	12 6.1	46.4		
9.3	8.4	37.2		
9.5	10.3	13.9		
9.5	39.5	24.1		
9.5	48.0	22.6		
9.3	13 13.5	16.1		
9.5	52.4	7.7		
9.5	52.9	38.9		
9.3	14 5.8	51.1		
9.0	8.9	15.8		
8.0	20.1	28.4	K	
9.0	21.3	42.0		
8.7	43.1	31.2	K	
9.1	43.4	56.1		
9.3	51.0	3.8		
9.2	15 11.2	10.1		
8.8	11.8	25.5	K	
8.0	28.1	46.1	K	
9.5	31.7	16.9		
9.3	31.7	12.0		
8.6	58.0	53.3		
9.5	16 8.1	53.5		
9.0	19.0	16.8		
9.3	25.2	34.7		
8.6	36.7	54.0		
9.5	41.2	28.9		
9.4	51.7	57.6	B	
9.5	54.0	12.7		
8.7	56.7	40.1	L	
9.2	17 11.1	33.4		
8.5	36.9	16.7	K	
6.4	52.6	51.8	K	
8.3	18 17.4	23.0	K	
9.2	39.6	41.2		
9.3	56.9	33.7		
9.2	19 2.6	26.8		
7.9	3.0	41.5	L	
9.1	11.4	53.1		
9.5	14.3	30.4		
8.5	20.3	59.5	K	
9.2	22.4	51.1		
8.8	26.1	31.1	B	
8.4	34.9	57.7	K	
6.2	51.4	11.8	P	
8.7	20 10.1	31.8		
10pr.	+ *30.60*	− *0.22*		

1241—1300

1301—1360					1361—1420					1421—1480					1481—1540					1541—1600				
	6ᵘ		−0°			6ᵘ		−0°			6ᵘ		−0°			6ᵘ		−0°			6ᵘ		−0°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
9.5	20	10.7	13.0		9.4	29	34.7	19.3		7.6	38	27.6	33.8	K	8.8	46	34.3	15.8		9.3	53	29.9	14.5	
8.4		17.6	47.1		8.9		40.7	52.1	K	9.5		38.6	42.0	B	9.0		47.5	2.2		8.3		33.7	27.8	L
9.5		24.4	15.3		8.8		57.7	45.0	K	9.0	39	4.5	3.0		9.5		49.0	25.3		9.5		39.9	27.0	
9.0		38.9	21.6		9.2		59.7	18.8		9.5		4.5	20.9		9.0		51.2	26.8		9.5		40.1	6.2	
9.5		53.8	48.8		8.8	30	16.2	3.8		9.5		14.9	28.5		9.5	47	1.0	7.4		8.8		44.4	13.0	K
8.6		57.7	38.4	K	9.5		16.8	56.5		9.0		16.5	42.0	B	9.4		3.3	12.7		9.3		47.8	31.6	
7.9	21	15.2	38.1	K	8.3		32.7	33.2		9.5		27.0	28.9		6.4		4.2	56.7	K	9.0		51.3	49.3	
8.3		23.5	28.8	K	9.5		55.7	57.5		9.1		39.7	50.3		9.0		14.0	16.1		9.5	54	5.3	56.3	
8.6	22	21.0	0.3	K	9.5	31	13.7	10.7		9.5		46.8	49.5		9.0		27.9	53.6	B	9.3		9.2	36.6	
9.5		29.5	55.4		9.5		19.6	35.0	B	9.4		49.4	58.4		9.3		39.4	51.1	B	9.5		11.6	24.2	
9.5	23	2.6	48.0		9.4		22.6	29.3	B	9.0	40	4.9	59.3	K	9.5		46.8	20.5		8.8		12.4	15.1	K
8.8		3.0	16.9		9.5		23.0	12.6		9.3		23.2	30.7		9.5		55.2	14.6	B	9.2		20.5	11.5	*B*
9.3		4.2	7.3	B	9.5		27.8	23.4		8.5		26.7	41.7		9.5		55.5	0.3	B	9.1		20.7	36.0	
8.8		4.7	10.8	B	9.4		31.4	42.6	B	9.5		33.3	34.6		9.2	48	7.9	39.3		8.9		21.9	9.6	K
9.0		10.1	17.5		9.2		39.3	15.3		9.2		35.9	56.9	K	9.5		8.2	18.9		9.4		30.0	57.2	
9.4		25.5	55.1		9.5		51.3	5.5		9.5		55.5	44.6		9.5		11.5	46.3		9.0		31.6	55.7	B
9.5		25.7	56.6		9.1		55.1	39.0	B	9.1		59.8	22.3		9.4		20.0	5.0		9.5		35.0	22.5	
8.9		26.2	42.0		9.3	32	12.0	5.4		8.9	41	1.3	53.2		9.4		29.0	3.5		9.5		46.2	23.4	
8.6		31.7	50.2	K	9.3		12.5	38.6		9.5		5.6	26.3	*B*	9.5		33.0	28.2		9.1		55.3	6.9	K
9.5		48.4	39.8		8.8		13.7	41.7		9.5		11.5	49.7		9.0		46.1	48.0		9.1	55	6.5	45.5	
9.5		54.9	20.9		9.5		23.2	53.2		9.5		21.0	31.5		8.5		59.7	49.3		9.5		23.7	9.9	
9.0	24	4.3	36.5		9.3		42.0	12.1		9.3		33.7	55.8	B	9.0	49	0.4	41.2		9.5		23.8	52.4	
9.5		5.2	54.6		9.5		44.7	5.2		9.3		34.6	53.8	B	8.8		13.2	14.1		9.3		32.7	6.3	
9.5		15.0	31.5		9.5		52.0	59.8		9.5		46.1	51.8		9.5		22.0	12.7		9.5		42.4	13.7	
9.0		36.2	51.3	K	9.5		53.7	13.9		9.5		47.2	23.1		9.0		23.7	43.5		9.5		42.7	56.1	
8.6		41.5	0.3	K	9.5	33	16.4	5.6		8.5		47.2	16.0		9.4		46.3	56.8		8.9		45.3	0.2	K
9.0		43.7	57.7	K	9.5		18.8	19.8		9.3		53.7	7.7		9.0		47.6	3.1		9.5		49.8	37.7	
9.5		46.6	19.4		9.3		21.2	37.9		9.0		59.7	23.7		9.5		48.0	18.0		9.3		59.7	27.8	
9.5		50.7	32.9		9.5		21.7	18.2		8.8	42	3.1	3.5		9.5		51.2	55.4		9.3	56	3.2	30.6	
9.5	25	6.0	10.0		9.5		24.0	32.4		9.2		5.9	46.8	B	9.2		53.5	43.8		9.3		10.4	28.5	
9.5		15.5	14.6		9.5		31.5	26.8		9.5		28.9	12.9		9.5	50	12.9	11.8		7.7		18.9	21.4	L
9.5		40.0	51.9		9.0		37.4	40.6	B	9.5		30.1	7.3		9.5		16.7	40.0		8.7		25.9	53.7	K
9.0		46.1	44.2		9.3		54.0	41.3	B	9.5		42.7	20.8		9.2		17.5	9.3		9.5		29.1	47.0	
9.2		52.1	27.6		9.3		55.2	7.9		9.5		51.0	37.8		9.4		35.1	59.3		8.8		47.7	26.6	
9.3	26	1.6	19.4		8.9	34	12.6	58.3		8.8	43	1.7	25.0	K	9.3		43.0	6.6		9.3		47.9	14.2	
8.4		18.2	9.8	K	9.2		19.5	28.3		9.5		4.7	52.7	B	8.8		56.4	20.6		9.4		55.9	49.0	K
9.5		32.8	51.7		9.1		20.1	53.9	*aB*	9.3		4.9	32.2		9.0		58.2	10.1		9.5		59.4	51.3	
9.2		44.6	0.6		8.8		28.2	9.2		9.0		6.7	20.2		9.5	51	4.7	24.1		9.5	57	12.1	55.2	
9.5		46.0	25.1		9.4		35.9	1.2	B	9.5		20.9	6.3		9.1		12.1	5.0	B	9.0		20.7	15.9	
9.5		48.4	45.5		9.3		37.2	46.0		9.3		21.7	47.9	B	9.3		12.3	15.1		9.5		26.4	29.3	
9.5		59.0	34.0		9.3		42.0	7.2		9.5		26.2	5.8		9.0		18.3	48.4		9.3		28.0	59.6	
9.5	27	2.6	30.6		9.5		50.9	39.5		6.7		27.2	21.8	K	9.4		28.7	14.1		7.9		47.9	39.4	K
9.0		20.8	53.7		9.3		52.0	44.7		9.4		36.1	59.3		9.5		36.1	10.4	B	9.4		58.0	39.5	
9.5		22.0	7.6		9.4	35	13.0	7.8		9.0		43.2	5.0		9.5		42.5	1.0		9.3	58	2.9	46.9	
9.5		24.1	5.5		9.5		23.0	9.3		9.3	44	30.3	57.1		9.4		45.7	15.9	B	9.3		3.3	6.7	
9.5		24.6	15.4		9.1		27.3	38.7	K	9.4		38.5	17.1	B	9.3		50.0	45.7		9.2		9.2	5.3	
9.5		29.5	57.3		9.5		33.2	27.7	B	9.0		43.4	7.8	K	9.5		59.7	16.9		7.9		9.9	34.2	K
9.5		42.8	14.3		9.5		47.0	27.7		8.7		47.2	7.4	K	9.3	52	13.3	35.2	B	8.4		17.4	59.4	K
9.4		43.8	36.1		9.5	36	17.0	11.1		9.5		49.1	44.0		9.3		14.3	1.4		9.0		29.9	55.1	
9.0		59.2	2.1		9.4		27.9	13.1		8.8		56.1	30.2		8.8		15.7	18.8		8.0		30.3	48.0	L
9.5	28	2.2	32.3		9.4		36.3	11.9	*B*	9.3	45	22.4	26.1		8.8		17.5	50.8		9.5		38.3	23.5	
9.0		9.1	49.5		9.5		54.4	51.2	B	9.5		33.9	14.3		9.3		31.0	8.9		8.8		50.9	21.3	
9.0		9.7	31.8	B	*9.1	37	17.1	57.5		9.5		48.6	19.9		8.8		33.1	14.9		9.5		56.0	6.5	
9.5		22.2	19.5		9.5		30.9	45.1		9.1		49.6	39.6		9.5		35.5	1.9		9.3		56.1	38.3	
8.6		23.9	59.0		9.5		43.5	23.3		9.5	46	10.4	5.2		9.5	53	3.0	1.4		9.3		57.4	41.9	
9.5		33.1	40.9		8.0		45.4	52.5	L	8.8		18.9	20.7		9.0		5.5	19.6		9.5	59	1.7	43.5	
9.4		36.3	13.4		9.0	38	4.2	19.3		9.0		19.2	48.7		9.2		12.4	35.3		9.2		18.4	47.9	
9.5		38.2	10.4		9.5		10.7	16.8		9.0		22.3	7.2	B	9.5		13.7	50.6		9.5		25.5	59.8	
*9.4	29	21.8	3.6	B	9.5		23.8	2.2		8.5		30.4	8.5		9.3		19.0	14.9		9.2		29.0	24.3	
9.0		25.3	21.8		9.5		24.5	52.1		9.0		32.8	33.0		9.5		22.4	37.1		9.3		29.5	13.5	
		+	−				+	−				+	−				+	−				+	−	
10pr.		*30.60*	*0.37*		*10pr.*		*30.60*	*0.49*		*10pr.*		*30.60*	*0.60*		*10pr.*		*30.61*	*0.73*		*10pr.*		*30.61*	*0.82*	

1358ᵃ				
9.5	28	59.0	23.7	α

1412ᵃ				
9.5	37	2.4	30.6	B

1601 — 1660

	6ª—7ª	—0ª	
m	′ ″	′	
9.2	59 39.5	1.9	K
9.4	40.8	38.3	
9.5	57.0	3.4	
9.5	0 7.5	15.5	
9.4	13.5	7.2	
9.5	13.5	47.4	
9.3	30.8	43.6	
8.8	40.8	42.8	
9.1	41.8	54.8	α
8.8	51.0	12.0	K
9.5	1 6.3	52.2	B
9.2	6.9	41.6	
8.9	10.8	59.9	K
9.5	13.3	11.3	
9.0	17.1	18.6	
9.4	21.7	44.1	B
9.5	33.5	28.7	
9.3	35.7	47.6	
9.5	40.5	35.3	
9.5	43.3	22.0	
9.5	45.2	5.5	
9.5	2 0.4	45.4	
9.2	9.8	56.3	K
9.5	11.2	24.8	
9.2	35.4	30.0	K
9.3	40.5	46.3	
8.3	49.1	26.9	K
9.2	53.4	38.2	
9.5	56.5	11.8	
9.4	3 13.6	55.1	B
9.5	26.1	58.7	
9.5	37.5	7.2	
8.8	58.8	11.0	K
6.4	59.9	4.1	K
8.5	4 9.3	48.0	
4.2	28.2	14.9	K
9.3	36.3	46.5	
9.5	36.7	38.0	
9.3	59.1	9.3	
8.8	5 12.2	19.2	K
9.0	13.4	25.7	K
9.0	14.5	26.4	S
9.5	19.3	53.2	
9.2	34.6	15.6	B
9.5	38.1	35.6	
8.0	53.9	2.6	K
9.0	6 1.6	53.1	
9.5	9.9	7.8	
9.5	11.1	45.2	
9.2	11.3	3.7	
9.0	25.4	1.9	K
9.0	31.7	57.5	
9.5	50.8	43.6	
9.5	56.4	31.5	
9.4	7 26.5	40.9	B
8.5	8 7.2	54.9	K
9.5	9.3	4.5	
9.3	18.9	17.7	
8.8	19.5	44.9	
9.0	22.9	21.3	K
	+	−	
10pr.	30.61	0.91	

1661 — 1720

	7ª	—0ª	
m	′ ″	′	
9.4	8 25.4	32.2	
9.5	29.1	33.0	
9.5	42.5	50.6	
9.3	9 2.9	13.7	K
9.5	6.1	58.4	
9.3	7.1	6.3	
9.2	51.8	18.0	B
9.3	53.9	32.9	
9.3	10 6.1	54.0	
9.5	24.4	12.6	
9.4	29.5	43.2	B
9.0	33.4	35.9	
9.5	33.7	58.6	
9.4	11 9.3	23.8	
9.5	43.5	50.5	
9.3	49.6	53.1	B
8.3	53.1	5.4	L
9.5	54.7	40.9	
9.4	12 2.8	44.8	B
8.7	11.0	38.9	
9.2	47.5	44.7	
8.7	13 13.5	56.3	
8.0	23.5	35.3	B
9.3	34.4	24.0	
9.0	47.8	6.8	
8.8	47.8	42.5	
9.3	14 2.7	24.9	
9.5	9.1	14.0	
9.5	22.4	51.2	
9.3	33.9	6.3	K
9.5	50.5	58.6	
9.5	15 13.3	11.3	
9.3	17.3	26.0	
9.5	30.0	26.5	
9.5	32.3	59.5	
9.5	32.5	32.9	
9.0	39.4	11.7	K
9.5	44.6	42.5	
9.4	46.8	39.5	
9.5	16 27.8	52.0	
9.5	28.0	25.6	
9.3	31.5	57.7	B
9.2	49.4	28.4	K
*9.5	59.9	8.5	B
9.5	17 4.6	26.6	
9.0	16.5	10.3	B
9.4	17.5	7.0	
9.5	18.8	47.7	
8.9	24.3	57.7	K
9.4	40.6	27.9	
9.5	41.4	35.4	
9.5	48.9	9.2	
9.4	52.1	22.6	B
9.5	18 9.9	29.6	B
9.3	14.5	28.3	
9.5	20.8	13.5	
8.6	23.5	25.6	B
9.0	39.5	5.3	
9.5	52.4	2.4	
9.5	19 10.0	4.3	
	+	−	
10pr.	30.61	1.06	

1721 — 1780

	7ª	—0ª	
m	′ ″	′	
8.0	19 10.4	11.2	L
9.3	14.2	11.1	B
8.8	21.6	18.3	
9.4	21.6	20.3	
8.8	53.5	7.8	K
8.7	20 22.9	55.4	K
9.2	55.0	58.5	
9.0	21 8.2	53.3	K
8.8	9.2	28.6	
9.5	37.1	22.0	
9.0	39.9	34.2	K
8.7	41.2	58.3	K
9.5	47.1	18.3	
8.7	22 23.6	42.1	K
9.0	27.4	19.0	
9.5	49.5	1.5	
9.3	23 5.0	35.5	B
9.0	6.6	20.3	K
9.5	11.4	30.1	
8.5	24.5	48.5	K
9.5	28.6	33.6	B
9.5	47.9	23.0	
7.5	55.9	49.1	L
9.5	24 23.9	3.2	
9.4	29.1	10.3	αB
9.0	30.4	13.0	K
9.1	35.4	42.8	
9.5	50.4	53.3	
9.0	53.5	4.7	
8.3	25 2.3	11.7	S
9.5	6.4	26.9	
9.3	26.6	56.8	
9.5	27.9	4.2	
9.5	50.3	23.8	
9.0	26 2.1	51.8	
9.3	48.4	9.7	
8.9	53.1	42.2	
9.5	27 5.0	38.5	B
9.3	5.3	1.4	
9.5	20.9	7.4	
*9.5	50.1	52.5	
9.5	52.6	59.8	K
*9.3	28 26.6	20.4	B
9.4	33.7	58.0	
9.0	47.3	12.0	K
8.3	29 51.4	52.9	K
9.5	30 1.5	58.8	
8.8	7.9	40.4	
8.8	17.5	7.2	
9.5	27.4	34.1	
9.4	38.7	49.8	B
9.5	53.4	24.0	
9.2	31 27.6	55.0	
9.3	27.7	44.2	
9.0	40.4	21.7	K
9.5	50.5	52.9	
9.2	51.9	25.8	K
9.0	32 5.8	49.4	K
9.3	6.1	12.0	
9.3	13.3	56.6	K
	+	−	
10pr.	30.61	1.21	

1781 — 1840

	7ª	—0ª	
m	′ ″	′	
9.0	32 54.1	29.7	B
9.4	56.6	30.7	
9.4	33 3.8	30.1	
8.8	11.8	50.9	K
9.3	19.0	49.8	K
9.0	30.4	22.0	
9.5	40.4	18.4	
9.3	53.6	50.9	
9.0	34 21.9	59.2	K
9.3	29.4	47.1	
9.3	38.7	4.3	
8.8	35 1.4	28.9	
9.5	10.9	12.4	
8.8	36 23.4	49.2	
9.5	30.4	16.0	
9.5	45.4	57.0	
9.5	46.2	5.2	
9.3	49.7	55.0	
9.0	51.2	25.2	
9.5	56.1	2.5	
9.5	56.9	16.6	
9.0	37 25.8	37.9	B
9.0	27.4	15.0	
9.5	27.7	11.5	
8.5	33.3	59.3	K
9.3	36.9	43.5	
9.0	48.4	13.4	K
8.0	53.9	4.8	K
8.0	57.3	8.8	K
9.5	38 3.0	56.2	
9.3	4.9	12.5	
9.1	6.9	4.0	
9.2	24.4	49.8	K
9.1	29.5	30.9	B
9.5	39.7	37.6	
9.3	40.4	9.3	
8.8	56.4	45.1	K
9.3	39 14.7	34.2	
9.3	28.4	13.5	
9.5	30.0	48.1	
9.2	42.9	55.0	K
9.3	52.5	0.5	
9.3	40 16.9	23.0	
9.3	18.4	39.8	
9.3	18.4	35.0	
9.5	30.0	4.6	
9.5	44.9	56.0	
8.5	41 13.1	24.3	
9.5	34.3	49.4	
9.3	36.1	20.3	
9.4	43.0	5.3	B
9.5	45.4	35.9	
9.5	51.4	11.1	
9.3	42 23.8	22.0	B
9.5	26.1	7.1	
9.5	26.4	14.8	B
9.5	26.6	0.5	
9.5	29.9	44.1	
9.5	54.9	41.5	
9.5	43 27.1	37.7	
	+	−	
10pr.	30.61	1.38	

1841 — 1900

	7ª	—0ª	
m	′ ″	′	
9.5	43 30.9	26.6	
9.4	49.5	54.7	
9.1	50.8	6.6	
9.2	52.6	5.8	
9.3	44 6.5	40.9	
9.5	25.4	1.2	
9.3	45 30.5	49.6	
9.5	32.9	21.7	
8.3	39.3	42.4	
9.5	52.9	12.0	
9.0	46 34.1	0.3	
9.3	47.4	42.1	
8.7	47 17.9	15.0	
8.7	22.5	6.6	
8.7	29.4	22.6	
9.3	46.9	2.7	
9.4	48 32.4	30.0	
9.5	49 2.9	30.4	
8.5	4.6	38.5	
9.2	20.4	54.3	
8.5	30.3	24.4	
9.5	47.3	36.1	
9.5	52.4	31.5	
7.5	50 1.9	14.3	K
8.2	6.8	55.1	B
8.5	33.9	25.3	K
9.5	43.9	25.6	
9.0	47.9	21.6	
9.2	58.0	5.0	
9.3	51 7.4	13.0	
9.5	16.9	28.6	
9.3	25.9	49.0	
9.5	27.9	28.9	
8.0	35.9	3.4	K
9.5	52 31.4	11.0	
9.5	47.4	11.7	
9.3	53 7.4	53.3	
9.0	21.9	19.7	
9.5	23.2	2.6	
9.5	41.8	57.2	B
9.5	45.4	8.4	
5.3	50.9	59.2	K
9.5	54 8.8	54.7	B
9.3	41.9	4.8	
9.0	43.6	44.4	
9.0	46.2	34.5	K
9.5	55 11.4	20.7	
9.5	31.9	33.0	
9.5	49.6	30.2	B
9.4	50.2	44.3	B
8.3	56 7.4	44.5	K
9.5	17.3	6.9	
9.5	23.9	0.5	
9.2	33.2	38.8	K
9.0	57 28.4	36.6	
9.5	28.4	6.2	
9.5	31.7	1.4	B
9.3	50.6	28.6	
9.5	50.7	4.2	
9.5	55.7	57.7	
	+	−	
10pr.	30.62	1.56	

1703ª				
9.6	16	51.0	16.1	B
1703ᵇ				
9.3	16	57.6	29.0	
1760ª				
9.7	27	45.5	0.3	B
1762ª				
9.5	28	8.0	20.6	B

1901—1960

m	7° – 8°		−0°	
	° ′	″	′	
9.5	58	2.4	33.2	
9.0		6.9	32.1	
6.8		24.6	9.4	K
8.5		36.9	21.9	K
9.3		44.5	9.9	B
9.5		48.5	15.4	
9.5		53.0	12.9	B
9.5	59	15.0	17.9	B
9.5		32.0	0.8	
9.3		35.7	55.7	
9.0		49.4	22.6	
9.5	0	13.2	57.5	
8.1		34.4	55.7	L
8.8		38.9	24.6	
9.3		41.3	40.4	
9.0		44.9	18.0	
8.5	1	4.9	36.8	L
9.3		17.3	8.4	
8.7		20.4	58.8	
9.5		31.4	55.7	
9.0		41.3	23.3	
8.0		54.9	0.6	B
9.0	2	44.7	33.5	
9.5		44.9	12.9	B
9.5		45.8	4.4	
9.0	3	4.0	47.7	
8.5		38.6	44.7	K
9.0	4	4.4	47.4	K
9.5		13.9	42.8	
9.5		26.4	2.4	
9.0		27.9	21.4	
9.5		51.2	17.0	
9.1		51.4	35.8	K
9.5		58.3	0.7	
9.5	5	25.4	24.0	
9.5		26.0	14.0	
8.5		51.4	19.0	K
7.5	6	0.3	44.5	B
9.3		21.4	35.0	
9.0		22.6	48.9	
8.8		29.9	0.5	
8.3		45.5	5.5	K
9.5		56.7	53.4	
9.3	7	22.7	37.7	
9.0		27.0	55.7	K
8.5		50.7	20.2	
8.2	8	17.5	48.9	K
9.0		27.2	46.6	K
9.5	9	17.3	34.6	
9.3		50.7	15.4	
8.9	10	21.7	3.8	
9.3		26.7	17.7	
9.5		48.6	22.9	
9.5		50.4	56.4	
9.5	11	7.0	8.9	
9.1		13.2	59.3	K
9.2		25.1	32.3	K
9.5		32.1	52.6	
9.5		44.9	28.7	
9.5	12	4.1	17.6	K
10 pr.		*+ 30.62*	*− 1.73*	

1961—2020

m	8°		−0°	
	′	″	′	
9.3	12	9.2	50.9	
8.6		12.0	20.1	K
9.5		19.0	21.7	
8.3		32.7	48.0	
9.3		40.4	38.8	
7.2		49.1	26.8	K
9.5		51.8	19.0	
9.3	13	4.8	10.9	
9.1		13.2	57.6	
9.5		52.0	14.5	
9.5		54.7	2.9	
9.1		58.4	38.3	
8.8	14	47.8	7.9	K
9.0		57.8	28.4	
9.3	15	4.1	38.4	
8.1		9.4	4.2	K
7.8		24.1	24.0	K
9.2		26.4	36.1	
9.0		41.0	18.5	K
9.2		46.4	50.4	
9.2		55.5	37.3	
9.5	16	8.1	17.8	
9.3		40.3	21.8	
9.3		49.0	52.3	
9.5		50.8	11.6	
9.3	17	0.2	50.2	
7.5		9.6	40.3	K
9.4		16.3	38.5	
9.0		32.6	11.7	K
8.6	18	37.3	46.8	
8.8	19	6.6	56.7	
8.5		12.2	13.5	B
8.0		29.2	44.8	L
9.5	20	2.0	24.4	
9.5		9.9	58.2	
8.7		25.2	55.3	K
9.2		30.0	50.9	
8.5		40.9	4.7	K
9.5	22	3.9	20.1	
7.2		7.8	28.5	L
8.8		24.5	35.2	
8.9		29.2	1.7	B
9.5		44.9	50.5	
9.5		51.6	7.9	
8.8	23	24.1	18.8	K
9.1		26.2	10.9	K
9.3		50.5	29.0	
9.1		52.1	6.3	
9.4		53.8	24.0	
9.3	24	58.4	56.7	B
8.5	25	0.4	27.2	K
9.4		1.6	26.4	
9.4		2.9	28.1	
9.4		15.0	49.0	
8.5		15.6	26.7	K
9.4		19.0	52.8	
8.5		27.6	48.5	K
9.5		33.0	0.6	
9.5		55.7	50.5	
9.0		57.3	5.9	
10 pr.		*+ 30.62*	*− 1.93*	

2021—2080

m	8°		−0°	
	′	″	′	
8.2	26	11.2	15.5	B
9.0		43.0	2.2	
9.3		47.9	38.6	
7.7	27	9.7	14.0	K
9.1		28.8	41.8	
9.1	28	1.7	15.9	B
9.5		16.7	40.4	
9.1	29	7.8	22.9	
9.5		23.5	56.7	
9.5		43.1	23.7	
9.2	30	3.8	11.8	
8.8		5.7	3.7	
9.0		8.6	49.5	
8.5		21.5	38.1	
9.5		22.0	12.6	
9.5		50.0	53.7	
9.5	31	37.1	5.2	B
9.5		39.1	55.2	
9.2	32	6.6	0.6	
9.4		12.2	0.6	
9.2	33	27.3	19.0	B
8.5		30.5	0.0	K
9.1		31.8	19.0	B
8.3	34	35.5	38.0	L
8.9		43.3	37.5	B
9.5		54.6	50.9	B
9.5	35	4.2	47.5	
9.5		16.5	5.7	
9.5		17.2	47.3	
9.2		22.2	13.5	K
9.2		45.7	55.8	
8.3	36	4.9	33.1	K
9.5		21.9	43.2	
9.5		37.1	42.3	
9.5	37	0.3	31.4	
9.3		5.4	31.0	
9.2		13.3	44.2	
9.5		24.0	38.1	
9.5		36.8	34.0	
9.5		37.7	25.7	
8.2	38	12.5	8.6	B
9.5	39	2.8	27.8	B
9.2		25.9	15.2	B
9.5		29.0	0.6	
9.2		35.5	8.9	B
9.2	40	1.5	18.3	
8.3		3.5	34.3	
9.5		58.3	46.1	
7.3	41	14.6	30.8	K
9.0		35.5	9.0	B
9.2		50.1	1.1	
9.5	42	7.5	4.4	
9.5	43	13.0	16.2	
9.4		20.3	49.3	
8.4		31.9	7.4	K
9.5	44	4.9	14.8	B
9.1		6.4	35.0	B
9.5		12.1	11.4	
9.0		23.3	29.3	K
9.2		59.3	16.6	B
10 pr.		*+ 30.63*	*− 2.10*	

2081—2140

m	8° – 9°		−0°	
	° ′	″	′	
9.2	45	9.2	7.1	
9.5		9.8	26.1	
8.7		47.9	32.6	
8.7		49.5	11.4	K
9.5	46	11.5	57.6	
8.4		22.0	2.0	K
8.2		34.2	4.0	B
8.4	47	18.1	9.8	K
8.7		29.8	25.3	K
9.3		58.4	20.4	
8.8	48	34.0	48.6	
8.3	49	22.4	11.6	K
8.5		27.5	15.9	K
8.5		47.3	47.7	B
8.2	50	3.6	34.0	B
8.0		7.1	6.3	K
9.5		41.2	50.8	B
9.5		52.3	26.0	B
8.7	51	6.7	40.8	K
9.5		14.9	44.6	
9.2		30.3	31.8	
9.5		30.7	21.4	
8.0		42.3	3.8	K
9.2	52	15.9	31.3	
9.2		56.9	35.8	
9.5	53	1.2	12.8	
8.6		25.6	7.0	K
9.5		37.2	52.8	
9.0	54	11.5	19.8	
8.0		14.5	0.9	K
7.7		15.0	54.3	K
7.9		33.9	33.4	B
9.4	55	0.3	59.9	B
9.4		4.6	29.6	
9.4		5.7	6.3	
8.9		5.8	54.6	B
9.4		6.8	56.9	B
9.5		8.1	36.7	B
9.3		37.0	10.4	
9.5	56	55.0	10.1	
9.4	57	5.4	54.4	
9.5		20.9	33.3	
9.5		28.2	1.2	
9.0		55.9	21.5	
9.5	58	7.0	1.8	
9.5		18.4	15.1	B
9.2		48.3	57.7	
9.5		52.0	25.0	
9.5	59	45.3	37.1	
9.5	0	34.0	58.8	
8.3	1	24.9	11.3	K
9.0		34.1	7.5	K
9.0		36.7	32.2	
9.5		39.5	46.0	B
9.4		47.5	48.5	
8.8		51.3	38.8	
9.3	2	2.7	20.4	
8.3		5.5	31.2	K
9.5		20.0	35.7	
8.5		37.4	29.4	K
10 pr.		*+ 30.64*	*− 2.30*	

2141—2200

m	9°		−0°	
	′	″	′	
9.0	2	39.5	56.2	L
9.5	3	26.9	19.6	
8.1		42.4	57.5	K
9.5	4	0.5	43.7	
9.5		26.9	34.1	
9.3		33.5	11.2	
8.5		34.2	37.1	K
9.2		45.7	42.6	
9.5		54.3	14.9	
9.5		54.4	55.9	B
9.3	5	11.3	12.5	
8.6		24.3	37.6	K
9.1		38.9	56.1	
9.2		46.8	5.9	
9.5	6	44.3	10.3	
9.5	7	14.0	2.3	
9.4		17.1	17.5	
7.1		29.2	59.3	K
9.5		34.1	20.5	B
9.5		41.7	22.9	
8.9	8	6.1	1.6	
9.1		10.6	2.6	
8.7		19.0	38.2	
8.7		20.5	37.9	S
8.7		23.9	44.6	
8.7		44.0	21.8	K
8.8		57.4	37.4	
9.4	9	13.1	58.8	
8.8		23.5	13.2	K
9.5	10	7.4	49.3	
9.5		23.9	4.4	
9.5		36.6	55.1	
9.0		41.3	45.3	
8.5		48.1	0.3	K
9.5	11	23.3	19.3	
9.5		51.4	18.3	
9.2	12	2.1	52.5	
8.5		33.9	2.7	
9.5		51.0	59.1	
9.5	13	14.0	24.3	
9.3		43.0	8.9	
9.5		43.3	17.2	
9.0		44.4	2.0	K
8.0	15	8.1	27.6	K
9.5		23.5	14.1	
8.8	16	5.3	29.8	K
9.2		46.1	46.3	
9.1	17	36.0	36.5	
9.1		45.4	28.2	
8.0		54.5	13.5	K
9.3	18	8.8	52.4	
8.9		25.0	8.4	K
6.6		40.9	36.5	K
9.5		52.9	48.4	B
6.2		59.6	50.3	K
9.5	19	0.4	0.6	
8.3		9.7	18.8	
9.1		30.1	16.6	
9.3	20	40.1	45.0	
9.2		47.2	23.9	
10 pr.		*+ 30.64*	*− 2.46*	

2201—2260					2261—2320					2321—2380					2381—2440					2441—2500				
	9°		—0°			9°—10°		—0°			10°		—0°			10°—11°		—0°			11°		—0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
6.7	21	40.0	37.3	K	9.5	45	19.0	45.6		9.5	11	12.1	27.8		9.2	45	47.1	15.5		9.3	19	17.0	56.7	
9.4		43.8	55.2	B	9.5		42.5	41.7		9.5		15.4	44.4		8.7	46	14.8	35.4		7.1	20	30.9	54.4	K
9.5		47.0	10.0		8.5		59.7	6.5	K	9.5	12	3.4	43.8		9.5		25.0	16.9		7.7		38.4	6.7	K
9.5	22	19.9	22.6		8.6	46	10.0	56.1	K	9.5		4.5	49.7		8.3	47	8.8	45.0	K	7.9	21	59.8	3.4	K
9.4		41.1	45.8		9.3		43.9	46.0	K	9.3		31.3	6.0		8.5		12.6	8.6	K	9.5	22	3.2	21.4	
9.5		45.9	11.3		8.3	47	7.0	35.0	K	8.8	13	26.7	44.0		8.5		23.4	8.6	K	9.5	24	19.6	6.1	
9.5		50.7	7.6		9.5		39.5	9.9		8.9		47.9	55.5	B	9.4		41.0	2.2	B	7.7		36.3	59.1	K
9.1	23	46.1	6.5	K	8.8		42.5	41.7	K	7.3	14	38.3	1.2	K	8.5		53.1	38.4		9.5		50.2	10.3	
9.0	24	2.2	58.7		9.5	48	4.3	59.5		9.0		58.0	25.2		8.7		58.7	3.0	K	9.5	25	17.7	25.2	
9.5		2.6	27.2		8.2		11.0	26.4	K	9.5	15	12.7	34.0		8.3	48	30.3	14.7	K	9.3		20.4	39.0	K
4.8		35.5	32.5	K	9.5		20.0	11.1	B	9.5		49.1	57.7		8.2		42.7	50.7	L	9.5		54.8	52.2	
9.5		50.0	45.7		8.8	49	42.5	39.7		6.5	16	2.7	9.7	K	8.2	49	17.1	23.2	K	9.5	26	6.8	26.4	
8.6	25	21.5	6.6	K	9.3	51	1.9	53.6		9.0		9.4	25.8		9.2		29.3	4.8		9.4		34.1	8.0	B
9.3	26	55.5	45.7		9.5		39.7	11.7		9.5		30.0	43.7		9.5	52	58.9	2.4		9.4		34.9	1.7	B
9.5		56.2	39.6		9.0	52	16.4	54.2		9.5		32.7	49.4		8.8	53	45.7	16.2	K	9.3	27	41.6	49.1	
8.3	27	20.0	45.3	K	9.3		19.0	40.6		9.2		49.6	4.1		9.0	55	17.8	46.7		9.5	28	4.0	27.2	
9.5		30.0	44.3		9.0		54.9	21.5		7.8	17	21.3	3.5	K	9.0		38.1	48.8		9.5		13.0	47.1	
9.4	28	5.1	55.7		9.0	53	4.1	33.4		9.3		32.0	44.4		8.8		55.1	8.3	K	4.7	29	31.5	2.5	K
9.3		15.4	54.7		9.5		47.0	2.0		9.3	18	13.9	4.3		8.7	56	6.6	42.5		9.5		44.2	49.0	
8.8		31.9	37.3	K	9.0		50.9	3.6	K	9.2		48.6	49.3		9.5		13.7	49.8		9.0		51.9	16.2	
8.9		39.3	57.9	K	7.5	54	10.5	18.9	K	7.0	19	14.2	15.2	K	8.0		56.3	30.0	K	8.5	30	2.6	41.3	K
9.5		49.5	4.3		9.5		49.0	45.0	a	9.0		30.6	18.2	K	*8.6	57	21.3	9.6	K	8.3		28.7	21.8	K
9.5	29	11.5	38.7		9.5		50.8	20.2		9.3		47.3	47.0		9.5		45.4	4.8		9.5		31.5	14.9	
9.4		36.1	53.3		9.5	55	18.3	59.7		8.5	20	11.7	13.5	K	9.1		52.5	4.6		8.2		37.0	48.2	K
9.4	30	6.4	48.4		6.7		24.8	21.8	K	9.5		15.1	27.8		8.5	0	28.3	9.3	K	9.5		48.9	20.9	B
9.3		11.5	21.1		9.3	56	10.1	51.5		8.3	21	1.2	23.2	K	9.5		33.8	42.5		9.5		51.2	16.3	
9.4		12.7	51.2	B	9.5		46.9	53.6		9.0		58.7	21.6		8.0		57.3	3.2	K	9.5	31	29.6	44.4	
9.5		48.0	53.5		9.5		50.3	32.4		9.2	22	3.4	8.4		9.3	1	16.8	40.1		9.5		56.0	2.2	
8.5		49.5	49.9	K	8.5		54.7	59.6	K	9.3		28.6	13.0		7.5		50.7	32.8	K	9.0	32	19.9	38.0	K
9.5	31	39.2	51.9		9.4	57	1.2	12.3	—	9.2		56.6	12.8		9.3		55.3	48.0		9.5		49.2	34.5	
4.0	32	28.0	28.8	L	9.0		23.5	38.7		9.5	23	29.0	51.5		9.3	2	28.5	5.3	B	9.0	33	18.2	43.5	
8.7		46.0	21.2	K	9.1		37.0	27.1		9.1		54.9	48.3		8.5	3	5.3	37.4		8.5		54.6	58.1	K
8.8	33	1.5	44.3		9.5	58	15.7	6.3		8.9	24	5.8	17.3	K	9.3		21.5	4.8		9.5		59.6	12.4	
9.0		11.0	27.0	K	9.0		53.3	47.0	K	9.1		17.3	4.9		8.0		56.6	36.3	K	9.5	34	44.3	39.6	
9.5		45.5	11.9		9.3	59	54.5	35.4		8.7	25	8.9	25.0	K	8.5	4	16.7	18.9	K	9.5		46.2	0.1	
9.5	34	44.5	4.3		9.5	0	31.7	42.0		8.6		18.3	7.2	K	8.8		33.4	0.1		9.5		47.9	47.1	
9.5		57.5	32.4		9.5	1	1.7	52.3		9.0	26	5.5	25.0		8.5		51.4	23.1	K	9.0	35	11.1	7.5	
9.5	35	56.7	23.8		9.5		5.3	14.0		9.2		30.3	35.6		8.5		58.9	0.1		9.0	36	0.3	7.8	
9.3	36	30.0	30.4		9.3		22.0	9.9		9.4	27	45.1	47.1	B	8.5	5	26.7	6.9		8.5	37	10.8	34.9	K
9.4		44.6	14.0		9.1		33.6	43.7	B	9.1	29	4.3	59.2	K	8.5		44.7	36.3	K	9.5		24.9	6.8	
9.5	37	21.0	3.0		7.9	2	0.3	57.7	K	9.5	30	33.1	4.4		9.5		50.7	35.0		9.3		28.2	35.9	
9.0		27.4	7.1	K	9.5		51.0	48.7		8.9	32	48.5	8.8		7.5	7	12.4	29.4	K	9.2		34.8	1.7	
9.5		44.1	37.2		9.3	3	22.2	54.0		9.1	33	24.0	7.0	B	8.8		38.2	10.9	K	9.5		48.8	14.7	
9.5	38	29.0	21.3		9.0	4	12.0	28.3		6.5	34	2.2	59.1	K	9.3	8	32.3	51.7		9.5	38	43.2	10.3	
9.3		42.3	30.1		8.5		51.7	32.9	K	9.3		43.4	47.0		9.0		45.2	57.4	K	9.5		48.4	51.5	
9.0	39	25.5	37.7		9.5	5	58.0	30.7	B	8.8	35	42.4	42.7		9.5	9	15.2	1.5		9.5		58.1	34.4	
8.3		58.5	20.2	K	9.4		58.2	28.1	B	8.9	37	8.7	23.1		8.8		19.3	16.4	K	9.3	39	13.5	9.0	B
9.0	40	35.7	32.7	K	8.3	6	0.0	13.3	K	9.2		47.7	1.5		7.0	12	0.1	51.8	K	9.5		19.2	8.7	B
9.0	41	0.8	56.8		9.5		2.0	29.1		9.2	38	0.5	39.1		9.5		7.0	21.3		9.5		31.6	47.5	
8.3		11.1	8.9	K	9.0		3.3	57.4		8.7		12.7	43.4		9.5	14	17.8	44.6		8.7		34.8	49.7	K
9.0		34.0	21.2		9.2		47.5	58.7		9.4	39	12.0	52.6	a	8.9		23.7	55.4	K	9.5		37.6	27.6	
9.0	42	6.0	10.9		8.2	7	10.7	24.5	K	9.0		16.8	55.1		8.8		58.1	16.9	K	9.5		37.6	8.7	B
9.5		30.3	49.9		9.0		48.4	50.4		9.3		54.7	7.4		9.3	15	11.3	6.9		9.3	40	21.8	38.2	
9.3		43.5	8.3		9.3	8	11.5	56.8	B	8.5		57.7	57.8	K	8.9		25.0	10.0		9.5		33.4	4.3	B
9.3		44.0	25.1		9.3		15.0	3.0		9.2	40	26.1	27.7		9.3		52.0	14.1		9.5		45.1	17.0	
8.0	43	1.0	44.6	B	8.5		45.0	52.5	K	9.5	41	13.2	55.7		~~8.6~~	~~16~~	~~28.8~~	~~21.8~~	~~B~~	9.5		53.0	35.8	
9.3		15.3	7.2		8.8	9	31.5	42.6	K	9.2		42.7	10.9		8.8		54.4	43.8	K	9.5	42	12.8	33.3	
8.8		19.0	29.8		9.3		38.1	1.9		9.4	42	33.1	0.4		9.2	17	48.2	50.0	K	9.0		59.2	26.9	
9.5		41.5	11.2		8.2	10	52.4	30.8	K	9.0	45	5.9	10.7		9.5	18	6.0	33.4		9.5	43	30.2	15.1	
9.5	44	9.7	48.0		9.5	11	11.7	21.6		8.8		16.5	45.5	K	8.2		34.7	16.2	K	9.5	44	44.7	28.6	
		+	—				+	—				+	—				+	—				+	—	
10 pr.		30.64	2.66		10 pr.		30.66	2.87		10 pr.		30.67	3.05		10 pr.		30.69	3.24		10 pr.		30.71	3.32	

2402°			
9.5	57	36.7	28.0

2501—2560

m	11ᵘ—12ᵘ		—0°	
	′	″	′	
9.0	45	32.0	27.0	
9.5		41.1	35.4	
9.5	46	10.2	24.2	
9.2		10.7	54.4	
9.5		16.5	54.7	*a*
9.0		33.6	58.4	
8.3		37.1	13.7	K
9.4	47	1.2	10.3	
9.5		13.7	53.7	*a*
8.0		24.8	38.5	K
9.3	48	8.7	16.0	
8.5		35.5	38.9	K
9.5	49	51.2	14.4	
9.5	50	2.3	8.4	B
9.2	51	21.2	14.6	
9.5		55.2	51.0	B
9.3		55.3	47.5	
neb	52	56.1	17.4	
9.5	53	29.4	25.7	
6.8		36.5	58.1	K
8.8		37.6	47.1	
9.5		49.8	9.4	
9.5	55	6.2	46.4	
9.0		23.2	38.1	*B*
9.5		37.7	50.8	
8.5		50.0	50.2	K
9.2	56	11.6	3.8	K
9.5		45.1	44.5	
9.1	57	9.2	30.9	K
9.5		12.2	59.8	
8.6		21.0	21.1	K
8.4		52.2	42.8	K
9.5		55.2	26.9	
8.8	58	3.3	11.7	
9.5	59	6.8	54.3	
9.5		24.2	8.1	
9.2		25.6	1.4	
9.5	0	19.2	53.4	
9.5	1	11.8	54.7	
8.8	2	22.3	12.4	
9.5	4	10.0	47.5	
9.2		35.1	19.0	K
9.4		49.2	30.5	B
9.5		54.1	21.8	K
9.5	5	31.5	8.1	
9.5		32.7	51.0	
9.4		39.1	43.3	B
9.4		58.6	38.3	B
8.0	6	11.5	25.4	K
9.5		43.5	50.9	K
k				
9.2		44.6	46.2	K
9.3		49.3	23.5	
9.3	7	8.8	12.4	
7.5		34.7	32.2	K
9.1		57.6	18.6	
9.3	8	43.2	57.0	
9.5	9	29.3	10.6	
9.5		53.9	30.6	
9.5	10	41.1	20.4	
9.5	11	44.7	40.9	
10 pr.		*30.72*	*3.34*	

2561 – 2620

m	12ᵘ		—0°	
	′	″	′	
9.5	12	52.9	59.6	
9.5	13	11.4	52.9	
9.5		14.2	20.7	
9.2	14	46.8	39.3	K
9.5		58.3	58.3	
9.0	15	39.0	7.9	
9.5	16	33.2	53.4	
9.0		43.0	27.2	
9.5	17	28.0	42.2	
8.8		52.7	17.0	K
9.3	18	7.0	26.3	*R*
9.5		11.0	48.7	
9.5		24.6	18.7	
9.3		30.7	27.6	
9.2		49.9	54.7	
9.2	19	13.8	7.7	
9.5		16.1	17.4	
9.5		37.9	56.8	
9.5	20	37.2	17.9	K
9.0		57.6	23.7	K
9.5	21	36.3	38.5	
9.3		36.6	6.7	
8.7		55.5	26.6	K
9.4	22	2.1	23.8	
9.3		42.3	0.5	
9.5	24	15.5	28.6	
7.7		39.2	57.8	K
9.3	25	46.8	38.2	B
9.5	26	39.9	8.1	
7.2		57.7	37.9	K
9.5	27	54.8	57.2	
8.8	28	30.2	38.2	K
9.5	29	56.2	21.4	
9.3	30	28.6	18.0	
8.0	31	31.8	2.5	K
9.5		40.7	33.3	
9.5		42.6	45.2	
9.5	32	47.0	53.0	
9.2	33	43.2	40.2	
9.2	34	16.6	44.5	K
2.8		20.1	39.8	K
9.3	36	5.1	18.5	
7.7		13.8	47.0	K
8.5		15.0	38.6	K
9.3		29.6	16.5	
8.7		58.9	42.6	K
9.0	38	4.4	32.8	K
8.3	39	7.5	3.0	K
9.3		40.6	20.9	
8.8	40	30.8	13.9	K
9.5		36.4	9.8	B
9.5		58.4	55.6	
8.7	41	32.6	42.7	K
9.3		59.4	37.1	
9.3	42	30.3	44.4	
9.3		37.9	29.5	
9.3	43	1.8	14.9	
9.3		28.3	55.1	
9.0		31.1	47.3	
9.0		41.0	57.5	K
10 pr.		*30.73*	*3.32*	

2621 – 2680

m	12ᵘ—13ᵘ		—0°	
	′	″	′	
9.5	44	32.4	53.2	
8.9		45.9	9.6	L
9.5		54.4	23.5	
9.5	45	23.6	46.7	
8.8		27.6	28.5	
8.8		29.5	8.0	
9.3		40.9	22.9	
9.0	46	42.4	41.4	*B*
9.0	48	6.6	20.4	
8.7		13.0	55.9	K
9.0		32.4	3.1	K
7.7	49	1.1	10.4	K
9.5		12.1	49.7	
8.7		14.4	4.5	K
9.0		29.6	19.9	K
9.4	50	28.3	25.6	B
8.5	51	1.6	16.2	K
9.2		29.0	58.8	
8.8		29.5	4.2	
8.7		55.6	21.2	K
8.2	52	41.6	23.9	K
9.2		55.0	54.6	
9.2	53	31.6	19.5	
9.3		37.6	33.4	
9.3	54	7.8	44.7	
9.3		22.6	24.5	
8.5	55	23.5	0.9	K
9.0		29.1	44.1	K
9.2	*56*	11.6	21.6	
9.3		17.6	35.5	
9.2		34.2	5.5	*a*
9.5		40.4	2.4	
9.5		57.5	52.4	
9.5	57	0.3	55.1	
9.0		44.6	23.5	K
9.5	58	10.3	54.6	
9.5		41.8	9.6	
8.8	59	49.8	54.2	K
9.3	0	46.7	22.6	B
9.5	1	2.8	16.7	B
9.2		4.0	5.4	
9.0	2	28.4	38.4	
9.5		48.6	27.8	
9.3	3	4.1	15.6	
9.3		58.8	45.7	
9.3	4	29.9	43.0	
9.3	5	6.0	6.8	
7.3		19.1	58.9	K
9.0		39.0	46.8	
9.5	6	12.8	20.9	
9.0		15.1	47.0	K
8.7	7	54.9	58.7	K
9.5	8	52.1	12.2	
7.2		59.4	36.8	K
8.8	10	0.1	54.9	K
9.3		13.9	52.4	
9.5		37.9	59.6	B
8.7	11	33.6	30.2	K
9.5	14	20.1	35.1	
9.0		27.3	8.0	
10 pr.		*30.75*	*3.24*	

2681 – 2740

m	13ᵘ		—0°	
	′	″	′	
9.0	14	46.2	24.2	B
9.5	15	34.1	45.4	*R*
9.5		40.6	3.1	
9.0		54.1	45.0	
9.5	18	44.1	41.0	
7.0		45.7	26.9	K
9.5		50.7	1.6	
9.5	19	35.1	15.6	
9.5		42.8	33.1	
9.0		57.0	19.7	
8.0	20	51.6	4.8	K
9.4	21	9.8	35.1	B
9.0		29.3	30.8	K
7.0		49.3	37.1	K
9.5		53.1	19.8	
9.0	22	20.9	38.5	K
9.5	23	12.8	57.0	
9.4		38.5	17.1	B
9.5	24	1.1	58.0	*R*
8.7		18.8	29.5	K
9.1		22.1	6.8	
9.1		42.6	16.2	*B*
9.5	25	11.2	9.2	B
9.3	26	8.9	53.8	
9.0		16.8	41.0	*R*
9.2		55.3	7.4	*R*
9.3	27	4.4	15.1	
8.5	28	25.1	13.9	K
9.5		33.2	38.4	*R*
7.7		51.3	11.0	*K*
9.5	29	5.6	14.0	
9.5		14.4	12.3	
8.8		16.1	31.4	K
9.0	30	27.6	50.4	P
9.2		35.6	5.8	
9.0		48.8	33.5	
8.8		58.6	16.2	K
9.2	31	3.7	4.8	B
9.0		13.9	30.1	*R*
9.5		17.5	15.0	B
9.2	32	8.9	29.2	K
9.0		36.6	53.3	
9.2	34	29.8	30.5	*R*
9.3		39.8	8.7	*R*
9.1	35	0.6	56.2	
9.5		11.0	7.8	
8.2		31.4	28.2	K
9.5		44.8	29.2	
9.5		53.0	45.7	
9.3		57.0	13.4	*R*
9.1	36	32.5	47.9	K
9.5		50.9	44.2	
9.0	37	37.6	2.3	*R*
9.5	38	14.4	21.2	
9.5		32.2	51.9	
9.2		56.8	31.3	K
9.5	40	28.3	50.8	
8.8		37.4	51.1	K
9.1	41	4.0	8.0	B
9.3		4.0	39.7	
10 pr.		*30.76*	*3.10*	

2741 – 2800

m	13ᵘ—14ᵘ		—0°	
	′	″	′	
8.7	41	6.8	19.2	*R*
9.5		14.1	44.5	B
8.5		32.3	51.8	K
9.5	42	5.8	53.2	
9.5		11.9	23.3	
9.3		15.1	3.1	*R*
9.5	43	14.8	45.6	
9.5		30.1	26.6	*R*
9.5		35.6	7.3	
9.5		46.9	13.9	
9.5	44	25.0	27.5	*R*
9.0		48.0	47.4	K
9.5	46	10.0	46.3	
9.5		25.7	5.7	
8.8		40.0	14.4	K
9.5	47	2.1	16.8	
9.5		11.9	12.0	
6.2		15.4	47.5	K
9.5		20.8	57.3	
8.8		27.2	24.8	K
9.5		27.3	48.1	
9.5		32.0	53.5	
9.5	53	45.4	59.7	
9.5	54	30.6	19.3	
9.5		44.6	34.6	
9.4	55	28.4	59.8	
9.5		32.3	29.4	
9.5	56	38.3	40.5	
8.7	57	27.6	17.5	K
8.6		49.5	12.6	K
9.5	58	18.5	5.4	
9.5	59	50.0	55.2	
8.9		50.3	22.8	K
9.2	0	0.2	21.7	K
9.5		3.9	5.7	
8.4		7.5	22.8	K
8.2		40.9	21.0	K
9.5		49.6	14.4	
9.3	1	50.9	49.5	
9.1	2	57.2	52.2	*B*
9.5		59.0	51.8	
9.5	4	17.2	4.1	
9.5	5	11.9	1.6	
9.5		35.9	41.9	
9.5	6	12.9	40.1	
6.2		13.6	9.4	K
8.9	7	39.3	44.0	K
9.2	8	13.6	59.8	
9.5		56.2	56.3	
9.5	9	14.1	58.2	
10 pr.		*30.78*	*2.95*	

1550ᵃ				
9.6	*6*	*43.7*	*26.4*	*B*

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	14ᵃ		−0°			14ᵃ		−0°			14ᵃ—15ᵃ		−0°			15ᵃ		−0°			15ᵃ—16ᵃ		−0°	
≡	′	″	′		≡	′	″	′		≡	′	″	′		≡	′	″	′		≡	′	″	′	
9.5	9	21.0	23.6	*B*	9.5	35	8.5	1.7		8.0	56	56.6	20.2	K	9.5	25	22.8	30.9		9.3	49	56.7	6.4	
8.9		27.0	40.5	K	9.5		18.2	2.7		9.4	57	45.1	13.9		6.0		30.6	41.0	L	9.5	50	5.4	58.1	
9.5	10	21.9	23.1		9.3	36	8.6	15.6		8.9	58	8.8	10.4	K	9.2	26	4.2	56.4	K	9.5		46.5	3.9	
9.5		26.3	42.9		9.5		9.0	36.3		8.2		9.0	44.2	*L*	8.8	27	0.2	57.3	K	9.4	51	30.0	52.8	B
9.5		27.8	52.9		9.5	37	22.9	5.5		9.5		23.5	36.2		9.5		5.8	42.5		9.0	52	3.1	12.6	
9.5		48.6	25.9		9.1		35.6	29.0	L	*9.5	59	20.1	44.0		9.5		14.4	51.5		9.5	54	7.4	6.9	
9.5	11	36.2	27.6		6.0		44.6	48.0	K	*9.5	0	20.7	24.7		9.5	28	11.9	59.5		9.5		7.9	4.1	
9.5		52.4	35.8		9.5		55.3	17.9		9.5		37.4	47.5		6.8	29	7.6	4.7	P	7.2		39.1	25.4	L
9.5		58.0	42.4		9.5	38	2.9	0.1		9.5		45.4	41.6		9.0		33.8	11.8		7.8	55	17.9	0.8	K
9.1	12	10.9	55.1	*B*	9.5		11.2	28.6		8.5		48.4	29.8	L	8.2	30	2.3	24.0	L	9.5		30.2	11.2	
9.5		21.4	51.5		9.3		13.6	19.5		9.5		51.4	12.4		9.1	31	9.3	7.4	*a*	9.3		44.8	8.7	
9.5	13	9.0	2.5	*R*	8.4		34.4	42.9	K	9.3	1	4.5	28.0		9.5		33.2	20.2		7.9	57	15.3	45.6	L
8.6		17.1	57.9	K	9.5		39.4	32.3	*B*	8.5		14.1	25.0	K	8.2	32	3.8	35.7	K	9.3	58	59.9	57.0	
9.5	14	2.3	50.9		9.4		50.6	39.4		8.8	2	3.0	50.4		9.2		6.5	55.3		9.0	0	5.2	32.8	K
9.0		17.6	37.0		7.7		52.3	12.7	L	9.3		20.7	57.0		9.1		13.3	25.4	K	9.3		14.6	19.6	
9.0	15	20.1	53.9		9.4		54.5	32.7	B	7.8		33.1	19.1	K	9.5		26.3	22.9		9.0		29.0	33.1	K
9.5	16	32.6	21.0		9.5		56.4	5.3		8.3		48.1	30.5	K	8.3		57.6	26.3	K	8.6		33.4	39.0	K
9.3		41.9	21.7		8.9	39	0.3	50.4	K	9.5	3	38.1	36.7		9.5	34	2.4	54.3		8.4		41.4	6.6	L
8.8	17	50.0	19.3		9.0		4.4	52.1	K	9.4	4	16.4	28.8		9.2		13.8	19.7	K	9.1	1	18.4	31.1	K
8.8	18	17.6	30.8	K	9.1		4.9	42.5	*B*	9.0	5	20.9	47.5	*B*	9.5		23.8	20.5	K	9 5	2	4.9	12.7	
8.5		36.4	2.6	K	9.5		19.8	56.8		9.0		21.1	36.1		8.3		52.2	56.4	K	9.4		16.4	31.6	K
9.5	19	5.6	8.2		9.0		32.9	12.0		8.9		40.3	51.5	*B*	9.5	35	54.7	6.2		9.5		33.6	44.2	
8.7		10.9	25.5	K	9.5	40	21.6	13.0		9.0		55.8	35.7		9.3	37	14.3	55.8		9.5		34.6	14.8	
9.0		29.3	46.8	K	8.7	41	7.6	29.4	K	7.0	6	35.0	47.2	B	8.8		54.7	56.0	K	9.3		51.0	22.2	K
9.5		40.3	29.0		9.5		21.9	46.0		9.5	7	14.0	1.2		8.8	38	28.2	59.2	K	9.1	3	7.1	15.1	K
9.3		41.9	38.0		6.7		28.0	14.7	K	8.2		40.1	38.9	L	9.0		57.3	47.5		8.8		21.9	10.3	K
9.0	20	21.9	53.7	K	9.5	42	23.7	4.1		9.5	8	34.5	25.0		9.0	39	53.8	9.7		9.5		33.5	21.2	B
9.5		30.0	20.7		9.5		36.3	45.7		7.7	10	14.6	27.4	K	8.5		56.8	36.5	K	8.4		40.4	44.5	
9.5	21	40.3	21.7		9.5		42.3	19.3		8.2	11	0.7	14.6	L	9.5	40	42.8	42.7		8.8	4	10.1	26.9	K
9.5		46.3	25.2		*9.0	43	1.3	13.0		9.0		4.8	4.4	L	9.3	41	4.0	51.1		9.5		19.6	18.3	
9.5		47.4	43.6		9.0	44	4.1	32.4		9.5	12	53.0	59.9	B	7.5		25.8	33.3	L	9.5		25.5	20.5	B
9.5		57.0	11.1	*B*	9.5		28.5	35.8		9.0		58.3	39.3		9.5		33.5	56.4		9.5		37.1	22.3	
8.8	23	27.3	46.4		9.5		54.6	28.9		9.5	13	35.7	55.8	*B*	9.0		48.8	11.5	K	9.2		40.6	55.8	
9.3	24	22.6	34.6		9.5	45	1.0	3.5	B	9.2		39.8	6.5	B	9.0		54.8	18.8	K	9.5		41.1	36.9	
9.5		54.3	25.2		8.8		4.2	49.8		9.1		42.0	11.4		9.5	42	18.8	49.0		9.4	5	2.8	10.6	
9.5	25	7.0	14.6	*B*	9.5		9.0	1.5	B	8.2	14	4.2	20.8	K	9.5		24.6	2.8		9.5		9.8	3.1	B
9.5		10.8	8.5	*B*	9.0		21.1	36.9	K	9.5	15	1.8	45.2		9.5		26.3	34.2	*B*	9.3		32.4	30.7	
9.2		16.1	5.9	K	9.5		43.0	8.4	*B*	9.3		8.4	35.7		9.5		27.7	25.4	*B*	7.5		45.6	9.0	L
9.3		23.7	0.6		9.3	46	0.0	51.1		9.5		10.7	42.8		9.5		39.4	29.4	*B*	9.5	6	17.4	12.0	
9.4	26	19.0	18.0		9.5		12.5	32.0		9.3		26.7	35.8		9.3	43	1.3	27.0	K	9.5		23.1	49.0	
9.4		31.0	9.8	*B*	9.5	48	2.6	11.5	*B*	6.5	16	15.8	31.3	K	9.5		20.0	4.5		9.5		30.0	7.8	
8.8		40.6	50.5		9.3		7.6	51.4		9.5		31.3	43.0		8.7		27.8	30.6	K	8.2	7	12.2	1.1	K
9.4		57.6	39.0		9.0	49	35.5	12.1		7.7		56.0	0.9	K	9.1		29.5	53.2		8.8		28.4	12.8	L
9.5	27	17.0	5.6		9.5		53.8	58.7		9.0	17	51.0	58.1	K	9.5	44	21.3	17.4		9.3		46.7	25.9	
8.7		20.6	46.7	K	9.5		56.0	37.5		7.5	18	17.3	44.5	K	8.7	45	4.8	53.9	L	8.2		48.7	16.2	L
9.5		50.0	21.3		8.8		56.1	51.3	K	9.5		34.8	21.5		8.0		6.8	34.0	K	9.3	8	43.7	35.1	
9.2	28	57.9	17.9	K	9.3	50	26.5	53.6		9.0		40.8	33.0		9.5		10.0	9.3	B	9.3		50.9	9.6	
9.3	31	19.6	12.5		9.5		51.0	29.2		9.5	19	7.6	54.1		9.0		37.3	41.3	K	9.5	9	29.4	43.8	
9.4		34.1	1.3		9.4	51	7.7	17.1	*B*	9.5		22.8	33.3		8.8		43.8	49.6	K	9.5	10	39.6	36.2	B
8.9		46.7	9.2	K	9.5		11.3	26.8		9.5	20	3.3	25.0		9.5		55.8	19.7		9.3	11	1.4	30.1	K
9.5	32	9.1	34.1		8.9		27.6	21.9		8.3		19.6	7.0	K	9.5	46	44.3	9.0		9.5		7.1	17.2	
8.9		37.8	27.7		9.5		38.0	44.2		9.5	21	37.8	42.0		9.3	47	56.5	50.9		9.0		15.4	44.9	
9.3		47.5	45.5		9.3	53	51.1	28.5		8.8	22	56.9	49.7	K	9.5	48	9.0	12.7	B	9.5		31.7	51.4	B
9.3		48.5	26.0		9.4		52.3	35.5		9.5	23	7.8	21.2		9.5		14.0	5.5	B	9.2		57.4	25.8	K
7.8	34	8.6	45.8	K	9.5	55	5.1	24.4		9.5		25.3	49.6		9.5		31.3	23.2		9.0		59.7	20.3	K
9.5		17.8	5.5		9.3		9.6	56.6		9.2		39.3	18.0		9.0	49	9.3	28.5	K	9.3	12	51.4	54.9	
8.8		31.8	22.3		9.5		14.0	53.5		9.3		46.3	14.2		9.5		21.7	2.5		8.9		53.7	36.6	K
8.9		32.7	2.1		9.5		45.5	45.5		9.5	24	10.8	36.1		8.4		25.7	31.9	K	9.4		58.2	33.4	B
9.5		48.6	33.2		9.5		51.9	12.2		9.5		33.0	9.0		9.5		33.8	10.3	B	*9.5	13	32.0	5.4	
9.5		57.5	9.4		9.5	56	15.6	24.6		9.5	25	10.6	9.2		8.0		34.0	19.0	K	9.1	14	1.6	53.9	
10 pr.		+ *30.79*	− *2.74*		*10 pr.*		+ *30.79*	− *2.52*		*10 pr.*		+ *30.81*	− *2.23*		*10 pr.*		+ *30.82*	− *1.90*		*10 pr.*		+ *30.82*	− *1.61*	

2890ᵃ				
9.4	*43*	*30.0*	*50.0*	
2890ᵇ				
9.3	*43*	*32.5*	*46.5*	

2926ᵃ				
9.7	*59*	*45.6*	*4.4*	*B*

3099ᵃ				
9.7	*13*	*42.4*	*10.1*	*B*

3101—3160

	16ª		—0°	
m	h	′ ″	′	
9.5	14	21.4	52.5	
8.8	15	19.0	7.5	
9.5		20.7	33.5	
9.4		29.5	39.1	B
7.0		38.4	30.7	L
8.0		42.5	21.5	L
8.2		44.4	13.8	L
9.5	16	17.0	58.5	
9.5		34.8	57.9	
9.5	17	20.2	52.8	
9.5	18	47.1	23.4	
9.5		51.3	48.9	
9.3	19	1.4	21.3	
9.5		2.4	41.1	
9.5		40.6	45.6	
9.5	20	7.3	5.4	
9.2		14.1	12.7	
9.0		14.7	27.2	
9.2		22.6	44.2	
9.0		58.5	24.9	B
9.3	21	0.3	2.6	B
8.9		3.5	28.9	
9.3		27.2	26.5	
9.4		30.3	44.9	B
9.5	22	13.4	53.5	
9.5		20.7	22.4	
8.5		34.4	28.9	L
9.5	23	50.3	55.1	
9.3	24	3.0	27.6	
9.5	25	34.5	8.5	
8.8		37.4	40.7	K
9.5	26	4.1	12.7	
8.8		8.8	57.1	K
9.2		19.1	52.8	L
9.3		19.4	37.2	K
9.5		34.3	47.0	
9.2		35.8	54.4	K
9.3		56.5	19.5	B
9.3	27	29.0	8.0	
9.3		42.8	49.5	K
9.5		44.9	9.2	
9.2		57.4	43.5	
8.4	28	31.1	6.1	K
9.3	29	10.3	59.2	
9.5		11.6	38.7	
9.5		28.4	34.8	
9.5		43.2	59.9	
8.6		55.0	6.4	L
9.5		59.7	27.8	
9.5	30	5.4	53.2	
9.5		10.8	59.5	
9.4		20.7	15.4	B
6.7	31	5.4	56.5	K
8.3		12.4	53.7	K
8.4		24.1	33.9	K
9.4		35.0	59.0	
9.5		50.4	9.2	
9.5	32	7.0	57.2	
9.5		31.1	44.2	
9.5		39.8	51.6	
		+	—	
10pr.		30.83	1.33	

3161—3220

	16ª		—0°	
m	h	′ ″	′	
9.2	32	44.9	54.8	
9.3	33	17.8	54.2	
9.5		25.1	20.6	
9.2		37.5	35.8	B
9.4		40.0	23.8	B
9.4		41.7	18.4	
9.3		41.8	8.6	
6.5		43.7	43.5	L
9.5		59.2	47.4	
8.9	34	28.1	24.4	K
9.5	35	6.4	16.2	
7.5	36	15.1	30.0	L
9.5		24.1	15.8	K
7.9		50.7	16.7	K
8.8	37	21.4	3.6	
8.0		32.7	20.3	K
8.2		45.7	43.8	L
8.0	38	19.4	30.8	K
9.0		53.1	33.4	K
9.3		59.6	4.0	
9.2	39	3.5	30.4	K
9.5		48.6	54.6	
9.0	40	22.4	48.3	K
9.4		28.1	15.1	
9.3		46.0	19.6	
9.0		49.8	51.9	K
9.3		59.9	43.1	K
9.5	41	3.7	7.8	
9.5		19.7	23.8	
9.0	42	24.0	18.1	K
9.0		39.2	59.9	K
9.4		46.3	5.5	
9.5	43	0.5	39.7	B
8.6		29.5	31.3	K
8.5		36.0	12.8	K
9.5	45	55.5	40.1	
7.2	46	1.0	53.2	K
9.5		17.8	9.2	
9.2		50.5	46.4	K
9.5		59.0	18.0	B
9.5	47	23.0	2.6	
9.5	48	21.8	44.3	
8.8		24.2	54.5	K
9.5		58.8	2.5	
9.5	50	25.5	9.0	
8.8		33.0	55.1	K
9.5	52	3.1	9.5	B
9.0		59.1	33.4	K
8.8	53	5.6	32.7	K
9.4		9.8	59.9	
8.8		54.0	33.9	K
9.5	54	22.2	28.1	
9.5		32.1	44.6	
9.5		40.1	31.4	
9.5		48.4	57.7	
9.5		55.9	10.5	
9.5	55	0.2	53.5	
9.3	56	1.6	35.6	
9.5		10.7	56.2	
9.2		22.0	25.2	
		+	—	
10pr.		30.83	1.17 > 1.11	

3172ª

9.5	36	21.6	15.8

3221—3280

	16ª—17ª		—0°	
m	h	′ ″	′	
9.4	56	44.7	1.9	B
9.2		58.1	39.0	
9.5	57	16.0	41.6	
5.8	58	3.9	40.9	K
9.3		29.1	2.0	
9.5	59	22.2	18.1	
9.5		38.4	54.0	
9.5		44.3	57.8	
9.5	0	16.9	3.6	
6.2		44.9	52.6	K
9.5	1	9.2	44.4	
9.5		34.6	24.8	
9.3	2	30.4	6.8	
8.0		42.6	33.3	K
9.4	3	13.7	57.5	
9.5		38.9	30.7	
9.5		51.2	35.7	
9.4		59.2	34.7	B
8.2	4	22.4	48.0	K
9.5		43.1	45.4	
7.6		54.6	35.5	K
9.5	5	3.2	10.8	
8.7		3.7	49.9	K
9.5		36.1	47.9	
9.1		36.8	0.4	
9.5		55.9	12.5	
9.5	6	6.2	7.0	
9.2	7	0.1	32.4	
9.5		14.2	0.6	
8.8		57.2	55.0	K
9.4	8	15.8	3.6	
9.3		50.7	44.7	
9.4		53.5	55.2	
9.5	9	8.6	49.9	
4.3		10.4	16.1	K
9.1		22.7	20.2	
9.5	10	22.1	25.0	
9.2		27.8	1.7	
8.7		29.9	48.6	K
8.0		47.1	36.1	K
9.5	11	18.4	6.4	
9.5		32.1	2.2	
9.1		35.7	26.4	
9.5		52.8	2.2	
8.1	12	34.1	9.8	K
9.2	13	5.1	1.1	
8.7		32.4	5.2	K
8.9		37.6	24.7	
8.7		52.6	30.2	K
8.4	14	0.2	37.1	K
9.0	15	14.9	23.0	
8.3		16.7	44.5	K
9.1	16	18.7	34.0	K
9.5		22.1	5.0	
8.5		29.9	42.6	K
9.0		54.6	26.7	K
9.0	17	2.7	32.3	
9.3		15.0	28.5	B
9.5	18	3.4	9.8	
9.1		24.1	23.0	
		+	—	
10pr.		30.83	0.77	

3281—3340

	17ª		—0°	
m	h	′ ″	′	
9.1	18	48.1	2.4	K
9.4		55.7	33.3	
7.7	19	11.5	52.4	K
9.5		14.2	56.1	
8.1		19.4	3.1	K
9.1		42.8	8.9	K
9.2		50.3	6.8	K
9.5	20	20.6	45.1	
9.5		25.8	0.1	
9.5		27.4	12.5	a
9.5		30.1	16.4	
9.3		35.7	51.0	
9.4		52.8	4.2	
9.4	21	18.6	21.9	
9.5		23.2	46.8	
8.0	22	6.4	2.3	L
9.1		20.1	29.9	
9.0		32.1	54.3	
9.0		55.7	17.5	K
5.4		56.0	55.9	S
9.3	23	18.4	33.0	
9.4		22.2	46.5	
9.5		39.8	4.0	
9.5		51.4	29.1	
8.3		53.5	13.3	K
9.5	24	0.6	57.9	
9.2		18.2	47.3	
9.4		21.3	9.4	
9.0	25	3.2	25.4	K
9.5		8.1	10.9	
9.3		16.7	31.3	
9.4		20.2	16.4	
9.5		24.1	56.6	
9.5		33.6	19.5	
9.5	26	0.2	7.1	
9.1		0.7	18.1	
8.8		11.6	40.9	
9.5		31.2	15.4	
9.3		33.7	44.0	
9.5	27	0.9	38.8	
9.4		17.6	44.7	
9.0		39.1	29.5	
9.5	28	25.7	40.2	
9.3	29	0.2	54.4	
9.5		4.6	38.8	
9.5		38.9	12.2	
8.5	30	5.3	56.7	K
9.5		6.7	36.4	
9.5	31	1.9	43.3	
9.3		23.0	54.7	K
9.5		39.7	14.1	B
9.5		44.6	46.5	
9.2		53.6	51.9	
9.5	32	0.2	20.1	
9.3		12.8	2.0	
9.5		13.3	58.3	
9.5		17.8	0.9	
6.5		29.7	32.3	L
9.5		40.1	3.9	
9.2	33	0.8	36.4	
		+	—	
10pr.		30.83	0.50	

3322ª

9.5	27	40.3	30.7

3341—3400

	17ª		—0°	
m	h	′ ″	′	
8.8	33	2.8	53.3	K
9.2		9.2	38.0	
9.5		19.6	28.8	
8.8		22.2	41.6	K
9.5		36.9	6.8	
8.1	34	11.6	35.8	K
9.5	35	21.3	54.3	
9.5	36	3.3	1.6	B
9.5		4.4	31.1	
9.5		43.2	29.4	
9.5		43.8	18.7	
8.2	37	24.7	3.5	K
9.1		53.0	22.1	K
9.2		59.8	28.4	
9.2	38	12.1	49.3	
9.5		14.3	18.7	
9.3		52.7	15.6	
9.5	39	1.8	17.7	
9.1		40.4	59.4	K
9.5		51.0	32.1	B
7.8	40	46.7	58.0	K
9.5		54.0	7.0	
9.4	41	49.1	26.7	B
9.5	42	6.3	30.2	
9.0		11.8	45.3	
8.0		41.3	38.0	L
9.3	43	1.0	31.1	
9.5		17.7	19.0	
9.5		50.4	59.1	
9.5		51.8	22.8	
9.0		58.7	29.4	
9.5	44	14.7	43.3	
9.5		54.6	11.7	B
8.7	45	7.3	6.3	K
8.2		26.5	0.3	K
9.3		41.8	53.6	
9.4		48.0	57.8	K
9.5	46	21.6	9.2	
9.5		24.3	28.4	
9.1		28.7	51.3	K
9.5		57.2	27.3	
9.0	47	38.0	12.1	K
9.5		43.3	23.9	
9.2	48	8.3	24.9	B
9.0		28.8	51.5	K
9.5		46.7	0.5	
9.5		52.8	19.7	
9.5	49	2.3	29.0	
9.5		22.4	43.6	
9.4		32.8	45.0	
9.5	50	43.2	23.2	
9.2	51	10.2	27.3	K
8.7		12.1	34.2	K
9.5		23.3	27.7	
9.4		37.7	37.3	B
9.5		43.4	28.7	B
9.5		58.3	5.5	
9.2	52	12.0	28.7	
9.5		36.2	15.3	
9.3	53	1.0	10.3	
		+	—	
10pr.		30.84	0.23	

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	17ᵐ—18ᵐ		−0°			18ᵐ		−0°			18ᵐ		−0°			18ᵐ		−0°			18 —19ᵐ		−0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	53	14.8	22.5		9.4	12	34.5	1.9		5.5	30	9.5	26.0	L	9.5	45	56.6	44.3		9.5	57	8.7	40.0	
9.4	54	44.8	55.7		9.2		57.3	47.2	B	9.2		29.6	20.1		9.5	46	0.8	59.0		9.5		20.2	53.2	
9.3	55	1.4	55.2		9.5	13	9.8	1.9		8.2		30.2	30.9	K	9.1		3.3	44.7	B	9.2		32.5	49.5	K
9.0		34.5	26.6	K	9.5		12.5	22.3		9.2		37.3	27.5		9.1		7.3	44.3		9.1		54.2	47.8	K
9.3	56	48.3	32.5	B	8.4		19.4	29.3	K	7.9	31	9.2	0.7	K	9.3		20.6	25.5		9.5	58	4.2	28.5	
9.5	57	24.8	46.7		8.8		45.9	50.3		8.1		44.4	1.3	K	9.5		34.5	41.7		9.2		4.7	42.2	K
9.5		26.6	6.5		9.1	14	31.9	6.3		9.2		47.7	2.0		9.5		34.8	52.1		9.5		25.4	23.9	
9.4		52.5	2.4		9.4		36.5	28.9		9.2		59.5	26.0		9.3	47	1.7	14.3		8.6		26.5	54.1	K
9.5		57.1	19.0		8.5		58.8	48.7	K	8.8	32	55.2	58.0	K	9.3		4.6	33.3		9.3		34.3	43.2	
9.3	58	1.2	5.5		9.0	15	1.3	8.7	K	9.5	33	16.6	34.1	R	8.9		11.2	54.4	R	9.5		47.3	52.3	
8.7		6.3	1.1		9.1		2.5	19.2		9.5		52.5	20.5	R	9.5		38.2	27.5		9.5		48.2	10.6	
8.8		39.0	20.8	L	9.5		49.5	29.6		9.2	34	29.3	56.1	R	9.2		44.0	53.4	R	9.5	59	5.6	48.7	
9.5		40.3	3.6		9.5	16	29.1	22.7		9.5		33.1	58.7		9.5		56.3	18.1		9.3		43.4	53.2	
6.5		41.5	27.0	K	8.6		35.6	4.5	K	9.5		35.3	37.1	R	9.3	48	13.2	6.0		9.5	0	8.8	47.1	
9.5	59	6.1	56.5		9.5		47.5	46.2		9.5		48.6	37.1		7.6		24.0	55.4	K	9.5		33.5	24.6	
9.5		14.2	30.3		9.5		50.1	8.4		9.2		58.2	28.0		9.2		27.1	51.1		9.3		53.8	45.7	
9.3		30.4	32.8	B	9.2	17	2.4	2.6	K	9.5	35	26.1	7.0		8.8		42.7	45.0		9.5	1	11.9	13.6	
9.3		38.1	20.0	K	9.3		32.5	2.4	K	9.2		55.9	41.7	K	9.3		43.2	44.1		9.4		32.0	57.1	
9.5	0	3.0	0.1		9.2	18	0.0	51.3	K	8.9	36	16.9	22.9	K	8.1		49.1	59.2	K	9.3		37.9	23.8	
9.5		25.1	43.5		9.2		8.2	18.9		8.0		27.2	20.8	K	9.5		54.9	55.2		9.0	2	23.1	31.0	
8.3		31.8	47.3	K	9.3		14.4	53.6	K	9.4	37	1.3	14.6	R	9.5		59.1	56.6		9.5		23.5	18.1	
9.5		44.0	11.7		9.5		43.1	35.8		9.3		27.4	34.5	K	9.5	49	20.5	52.0	B	7.0		24.1	39.2	K
9.5	1	8.8	22.1		9.3	19	9.4	0.6		7.2		29.9	30.9	K	8.1		25.8	58.4	K	8.7		29.8	47.7	K
9.5		48.3	33.3		8.4		9.8	15.9	K	9.5	38	3.1	55.2		9.4		29.8	22.8	B	9.0		40.4	39.9	K
9.5		48.6	23.5		9.2		18.0	10.8	K	9.5		8.5	55.5		9.5		32.0	7.1		9.1		40.7	59.7	
9.0	2	4.5	20.7		9.5		27.2	21.3		8.3		19.2	25.0	K	9.5	50	2.2	58.7		8.5	3	7.0	55.6	K
9.5		10.6	29.6	B	9.5		52.2	50.3		9.5		33.6	41.7		7.6		9.4	42.5	K	9.5		23.4	26.0	B
9.5		26.3	27.7	B	9.3	20	50.3	32.1		9.1		34.8	24.1	B	9.3		34.1	8.7		9.3		38.1	4.3	
9.5		28.9	25.7		9.5		57.7	12.4	B	9.5		46.8	18.1	B	9.0		57.2	12.3	K	9.3		40.1	52.6	
9.5		55.6	24.2		9.5	21	5.8	22.6		9.0		58.9	50.0	K	8.2	51	2.3	22.8	K	9.2		42.0	29.4	
9.0	3	2.3	18.7		9 5		25.0	41.6		9.3	39	1.6	36.8	R	9.5		20.5	8.8		9.5		49.1	55.4	
9.0		34.9	1.8		8.7		47.1	52.8	K	9.5		14.3	14.8		9.3		20.9	39.2		8.9	4	9.4	18.2	
9.4		48.0	29.4	B	9.5		50.9	45.8	B	9.3		23.7	58.1		9.4		24.9	54.7		9.4		47.1	50.7	
8.0		48.8	40.5	L	9.5	22	11.6	7.2		9.3	40	14.4	38.4		8.5		30.2	41.6	K	8.6		52.5	7.9	K
9.3		57.0	43.5		9.3		14.0	25.1		8.0		19.0	24.1	K	9.4		39.1	36.3	B	9.5	5	53.6	39.9	
9.5	4	15.2	23.9		9.2		36.9	42.7		9.2		22.8	5.8	K	9.5		40.8	58.1		9.1		56.2	49.2	
9.4		17.2	10.0		9.5	23	16.4	24.2	B	9.3		24.1	3.7	K	9.5		41.7	6.4	B	9.2	6	29.1	39.0	
9.5		28.5	25.8		9.2		24.2	30.5	B	9.5		31.9	32.0		9.3		46.8	10.2		8.3		29.9	8.4	B
9.5	5	7.7	13.7	B	9.5		33.7	44.0		8.8		54.0	33.1	R	9.4		50.9	56.2		8.1		33.0	7.1	B
9.0		27.2	48.3	K	8.2		46.9	32.6	L	9.0	41	10.5	11.8		9.3		58.9	7.3		9.5		39.8	47.0	
9.4		27.6	14.5	B	7.0		55.9	34.7	L	9.5		27.3	18.5		9.5	52	16.4	30.0		9.5	8	15.9	18.5	
9.5		33.4	1.8		8.3		58.3	21.5	R	9.1		33.1	2.4	K	9.0		45.2	49.8	K	9.5		24.4	25.2	
9.2		53.2	47.6	K	9.0	24	2.2	42.4		8.3		53.8	33.3	R	9.5		53.2	53.7		9.4		27.6	43.1	
9.5	6	6.7	24.0		9.2		38.2	45.4		8.4		55.6	9.7	K	9.5	53	3.6	45.5		9.3		49.6	17.9	K
9.1		46.9	5.3	R	9.0	25	27.9	26.0	K	9.5	42	2.3	43.3	B	8.0		15.9	24.9	K	9.5		56.1	9.2	
9.5		55.1	43.1		9.5		48.6	26.1		9.5		3.9	12.2		7.4		17.8	38.9	K	9.5		59.2	8.0	B
9.5	7	13.8	0.6	B	9.4	26	32.6	31.6		9.4		10.5	59.4		9.4		53.0	4.3		9.5	9	18.0	31.5	
9.5	8	18.2	5.0		8.7		52.2	46.6	L	9.0		46.0	10.6	K	9.3	54	12.1	20.8		9.5		19.8	5.2	B
9.5		31.5	15.0		9.0	27	15.2	44.0	B	8.6		55.2	4.9	K	9.4		17.5	20.5		9.5		50.0	57.9	
9.5		35.4	31.1		9.5		20.8	28.1	R	8.5	43	12.4	31.0		9.5	55	9.6	38.6		9.5		53.3	40.4	
*																								
9.5	9	2.0	57.6		9.3		21.3	49.7	B	8.9		22.3	42.8		8.5		16.2	54.8	K	9.4		59.3	26.0	
9.5		17.5	27.5		9.3		26.5	43.0		9.0		36.2	14.1		8.5		17.2	55.0	K	9.5	10	13.5	49.5	
9.5		36.8	2.2		8.0		42.9	4.1	K	9.5		42.3	41.9		9.3		34.9	48.3		9.5		20.0	8.2	
9.5		37.8	8.6		9.2		59.4	4.0	B	8.8		47.4	46.3		9.5		43.1	4.6		8.9		23.6	18.4	
9.5	10	30.5	5.0	B	9.4		59.4	5.5		9.2	44	7.8	44.9		8.5	56	11.8	16.2		9.5		25.7	42.5	
9.5		38.3	10.5		9.5	28	23.7	53.4		9.5		8.9	4.4		9.5		31.1	48.9		9.3		26.2	26.3	
9.5		51.2	40.9		9.1		39.6	26.1	K	9.5		37.2	35.4		9.5		35.5	59.8		9.5		45.7	32.2	
8.7		54.6	54.8	K	9.3	29	5.5	39.6	K	8.1		40.7	23.5	L	* 8.2		47.3	44.6	K	9.5		52.0	2.3	
9.3	11	2.4	38.0		9.2		15.9	35.4	K	7.9	45	34.6	7.6	K	8.2		50.8	30.3	L	9.5	11	1.8	11.5	B
8.6		27.5	43.4	K	9.5		49.6	14.9		9.5		51.6	39.2		9.5		51.2	2.5		9.5		34.6	45.4	B
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.84	0.04		10pr.		30.84	0.31		10pr.		30.83	0.59		10pr.		30.83	0.74		10pr.		30.83	0.92	

3450ᵃ				
9.5	8	41.1	35.8	

3637ᵃ				
9.6	56	36.4	58.2	B

3701—3760

	19ʰ		−0°	
m		″	′	
9.3	11	35.6	33.9	
9.4		44.1	55.5	
9.5		44.5	6.5	
9.1	12	5.5	46.6	K
8.7		16.7	18.4	K
9.4		28.6	1.1	B
9.4		51.5	47.8	
9.0		55.4	48.7	K
*9.5	13	1.1	6.9	
9.5		13.0	26.5	
9.5		18.8	31.5	B
9.4		26.9	59.5	
9.5		35.2	28.7	B
9.5		40.6	52.0	
9.5		47.3	3.0	
9.4		57.7	16.2	B
9.0		58.9	11.0	
9.0	14	4.4	13.4	
9.3		4.6	1.0	
9.4		19.7	16.0	B
9.5		28.0	58.9	
9.3		32.6	23.1	B
9.3		33.7	52.4	
9.3		33.9	29.8	B
5.0		54.2	33.0	K
8.7	15	13.7	34.0	K
9.5		17.5	28.8	
9.3		30.8	6.8	K
9.4		52.6	32.8	B
9.5		53.5	19.9	
8.2	16	4.4	48.1	K
9.5		7.9	44.9	
9.1		45.8	7.8	
9.3	17	17.7	28.5	
9.3		22.7	1.6	
9.1		55.9	29.9	
8.5	18	6.7	13.4	K
8.9		31.6	56.9	
9.2		40.2	38.7	
9.5		40.5	56.1	
9.2		49.1	32.2	K
8.6		52.6	23.4	L
9.0	19	24.7	49.0	
8.8		25.5	5.6	K
9.5		41.8	2.0	
9.0	20	7.4	36.4	
8.9		22.4	43.9	K
8.8		26.4	21.3	
9.0		37.2	48.4	K
8.2		39	42.5	K
8.4		54.4	28.7	L
9.3	21	0.4	53.7	
8.7		6.1	49.7	K
9.3		8.9	3.4	B
9.0		13.1	54.1	K
9.5		26.6	35.5	
9.5		27.9	45.2	
9.5		47.1	44.2	
9.5		48.4	10.4	
6.9		53.0	2.7	L
10pr.		+ 30.83	+ 1.09	

3761—3820

	19ʰ		−0°	
m		″	′	
8.8	22	8.1	24.6	
7.2		38.2	44.9	L
9.0		41.4	27.6	K
9.4		47.7	6.1	B
8.9	23	58.4	7.8	K
9.1	24	14.2	32.8	
9.3		25.1	6.8	
9.5		45.6	44.9	
9.5	25	4.7	19.2	
9.0		14.5	59.4	B
9.3		45.4	44.2	
9.2	26	4.2	11.9	
9.3		4.8	27.6	B
8.5		9.1	34.6	K
9.2		15.5	14.3	
9.5		19.5	11.3	
9.2		22.7	43.0	
9.3		46.6	15.8	
8.7		59.4	40.3	K
9.3	27	5.4	14.2	
9.2		27.9	35.2	
9.1		29.4	12.8	
9.5		41.0	48.7	
9.5		42.3	15.1	
9.3		42.7	7.3	
9.0	28	19.5	32.3	L
9.5		19.9	41.0	
8.0		35.4	13.0	K
7.2		36.0	4.4	K
9.2		43.5	1.2	
9.5		51.8	27.9	
9.1		52.4	35.5	
9.1	29	13.6	23.7	
9.3		18.6	36.3	
8.7		23.1	44.1	
8.7		29.2	12.5	K
8.9		35.1	11.9	
9.2		49.4	2.6	
7.8		49.5	47.6	L
8.8		50.8	8.0	K
7.2	30	7.1	27.5	K
8.9		10.9	55.3	B
9.5		40.0	14.8	
7.6		46.1	48.7	L
9.3	31	1.6	35.6	
8.7		8.4	58.6	
9.1		45.1	48.9	
9.2	32	4.0	8.2	
9.1		14.4	23.1	
8.2		37.1	38.4	K
8.7	33	1.1	33.0	K
9.5		3.4	11.3	
5.8		16.1	57.0	K
9.0		39.1	33.4	K
9.5		52.3	59.0	
9.4		52.9	14.4	B
9.2	34	5.9	47.4	K
9.5		16.9	56.3	
9.1		40.1	47.6	K
9.2		43.4	21.3	
10pr.		+ 30.83	+ 1.26	

3821—3880

	19ʰ		−0°	
m		″	′	
9.3	34	58.2	43.4	B
9.4	35	13.9	54.9	B
9.4		14.4	49.0	
9.2		18.4	54.8	B
9.5		28.1	7.7	
9.5		46.8	13.6	B
9.5		58.3	51.3	
9.5	36	12.3	48.0	
9.4		13.0	1.3	
8.6		15.6	19.6	L
9.1		28.7	55.0	
9.5	37	2.1	19.2	
9.5		44.9	24.2	B
9.5	38	0.0	20.2	
8.3		0.7	29.7	K
9.3		6.3	59.8	B
9.5		26.6	43.0	
9.5		40.5	42.0	
9.5	39	1.5	27.2	
9.5		15.2	51.2	B
9.4		31.6	8.5	
9.2	40	18.7	7.5	
8.1		24.4	24.3	K
8.6		26.6	47.2	K
9.5		50.6	13.9	B
9.5	41	23.1	24.0	
9.5		43.1	13.4	
9.2		51.7	20.6	
9.5	42	6.0	9.6	
9.5		26.0	26.9	
9.5		27.1	33.0	
9.1		39.7	20.2	K
9.5		46.4	51.8	
9.4		54.9	57.2	
9.5	43	17.0	26.9	
9.3		30.9	16.7	
9.5		33.3	33.0	
9.2	44	7.7	39.0	
9.0		24.2	52.7	
9.5		43.6	43.0	
8.9		50.0	57.9	
9.5	45	24.1	34.8	
9.4		31.7	44.7	
8.3		44.7	3.3	K
9.4		55.6	21.6	
9.0		56.6	50.9	
9.5	46	30.1	1.7	
9.5		34.5	30.7	
9.5		51.2	25.2	
9.3	47	14.6	40.4	
6.0		19.8	6.0	K
9.5		23.7	17.5	
9.5		45.7	5.1	
8.5		45.8	49.1	
9.2		46.3	9.9	B
8.8		55.3	2.6	K
9.2		56.8	41.7	
9.5	48	25.9	49.6	
9.5	49	1.2	45.3	
9.3		34.1	55.9	
10pr.		+ 30.83	+ 1.44	

3881—3940

	19ʰ—20ʰ		−0°	
m		″	′	
7.0	49	47.8	2.0	K
9.5	50	11.3	22.6	
9.3		12.1	8.8	
9.0		28.3	14.7	
9.3		38.0	8.2	
9.3		47.0	29.5	
9.3		57.3	8.0	
9.3	51	2.0	4.7	
9.0		27.4	13.2	
9.2		27.4	2.5	
9.2		29.3	48.5	
9.5	52	7.5	16.5	
9.4		16.2	12.3	B
9.5		42.5	23.7	
9.1		44.1	55.7	K
9.3	53	10.4	35.7	
9.5		36.8	17.2	
9.5		37.4	7.2	
7.5	54	12.2	36.5	K
9.2		14.9	12.7	
9.5		21.4	20.5	
9.5	55	19.6	46.4	
8.0	56	0.1	19.0	K
9.1	57	18.9	14.8	
9.5		20.5	32.4	
9.2		27.4	56.6	
9.5	58	11.1	23.4	
9.5		33.8	15.5	
9.5	59	6.9	50.9	
9.5		12.8	4.8	
8.5		24.2	33.7	K
9.2		31.1	26.3	B
8.5		53.8	42.2	K
9.5		54.3	5.1	
9.5	0	10.8	39.0	
8.9		15.7	9.7	
9.5		31.6	9.6	
9.3		43.8	39.9	
9.5		44.0	21.4	
9.5		49.2	29.4	
9.5		50.5	6.0	
8.2		58.7	43.0	K
9.5	1	0.1	4.8	B
9.5		13.6	6.4	
9.5		17.0	25.8	B
7.6		24.3	34.6	K
9.3		39.2	43.8	
9.4		40.2	28.7	B
9.3	2	1.1	18.7	
9.3		18.4	35.2	
8.7		31.3	7.8	
8.3	3	0.9	36.1	K
9.4		3.6	18.7	B
9.1		32.8	15.9	
8.5		51.4	33.7	K
9.0		51.6	20.0	
8.2		52.7	33.3	K
9.3	4	0.0	47.4	
8.8		14.1	28.8	K
8.4		23.9	14.6	P
10pr.		+ 30.82	+ 1.66	

3941—4000

	20ʰ		−0°	
m		″	′	
9.5	5	26.1	10.6	
7.6		38.4	45.7	L
9.5		44.0	6.6	
9.2	6	18.3	24.9	
8.8		24.6	36.7	K
9.1		35.2	27.5	
9.2		48.3	27.0	
9.5		50.8	27.7	
8.3		53.6	17.4	L
9.3		57.9	25.2	
9.5	7	5.3	23.0	
9.5		9.3	30.5	
9.4		15.0	21.8	
9.5		20.0	24.6	
9.5	8	5.9	56.5	
9.5		6.2	32.0	
8.5		10.8	11.1	K
9.5		30.7	34.4	
9.2		56.5	33.8	
9.1	9	25.3	53.7	
9.0		31.5	29.5	
8.8		40.2	59.8	
8.7		47.5	5.6	K
8.9	10	35.0	33.8	
9.3		52.7	26.3	
9.1	11	1.5	50.1	
9.5		16.5	31.1	
9.4		31.2	26.0	
9.0	12	20.2	45.1	
9.2		21.5	16.8	
9.5		31.0	58.1	
8.4		34.8	59.7	
9.3		35.0	39.4	
9.0		46.7	2.5	
9.5		58.5	8.6	
*9.1	13	6.4	57.8	
8.1		31.0	21.7	B
9.5		44.0	22.6	
9.1	14	19.9	31.6	
9.2		25.7	28.6	
8.6		31.4	46.0	
8.6		46.5	39.5	K
9.5		51.7	39.1	a
9.1	15	10.2	0.1	
9.1		14.3	44.7	
9.5		17.0	58.3	B
8.7		19.4	12.3	
9.5		34.2	23.9	
9.0		40.3	6.0	
9.5		50.4	19.4	
7.3		52.3	55.1	K
9.5	16	6.5	41.4	
9.3		21.2	5.1	
9.4		57.1	18.8	
8.5	17	7.6	50.6	K
9.2		11.3	8.6	
8.6		46.3	45.5	K
8.6		52.3	15.5	
9.5	18	8.6	45.3	
9.5		12.7	24.8	
10pr.		+ 30.82	+ 1.83	

3708ᵃ var. | 12 | 57 | 24.0 |

3976ᵃ 9.2 | 13 | 27.4 | 21.8 | B

m	4001—4060 20ᵐ ′ ″	−0° ′		m	4061—4120 20ᵐ ′ ″	−0° ′	
9.5	18 23.0	56.3		8.8	31 38.4	51.2	
9.5	26.0	0.7		9.3	44.1	34.0	
9.4	37.5	28.3	B	9.0	48.1	24.5	
9.1	19 14.0	33.3		5.4	59.5	1.3	L
9.5	36.5	53.0		9.3	32 36.6	15.4	
8.8	48.3	26.0	K	9.3	33 11.4	40.4	
9.0	48.8	33.2	K	9.2	53.9	58.1	
9.5	20 3.5	53.4		8.3	34 7.3	32.4	K
8.7	6.0	24.3	K	9.0	8.9	15.0	
8.5	32.4	38.1		9.0	9.4	10.3	
9.5	53.8	48.4		9.5	24.8	55.6	
9.0	21 4.1	1.5	B	8.6	59.5	4.2	K
9.5	5.5	58.6		9.2	35 8.8	23.7	
9.5	17.2	46.8		9.0	47.0	5.0	
8.8	18.1	35.6		9.3	48.5	37.7	
9.2	24.7	44.7	B	8.3	36 8.0	3.1	K
9.2	34.7	31.7		8.8	19.2	13.9	
9.1	22 10.6	28.8		8.8	35.7	19.9	
9.3	22.6	17.0		8.3	37 10.7	36.7	L
9.0	27.0	46.2		9.5	11.5	2.9	
9.4	44.0	19.7		9.5	15.3	0.4	
9.1	50.5	25.9		9.5	23.3	9.3	K
9.5	59.0	21.4		9.5	27.1	36.7	
9.3	23 3.0	8.4		7.8	30.5	13.5	K
9.0	12.8	32.7		9.4	49.6	5.1	
8.8	23.5	56.4	B	8.9	38 1.7	8.4	K
8.6	28.8	11.5	K	8.8	9.3	3.5	K
9.3	35.3	32.9		9.5	20.7	31.1	
9.0	38.9	55.0		7.0	34.5	52.0	K
9.5	55.4	8.9	B	8.7	39 35.7	20.6	K
9.5	24 13.4	12.5		9.5	47.5	37.5	
9.0	20.7	47.5	B	8.8	40 2.8	57.6	K
7.7	27.9	38.2	K	9.5	9.9	52.9	
9.0	39.4	43.1	B	9.5	16.5	21.6	
9.5	25 8.1	35.7		9.5	20.0	46.2	
9.3	16.5	40.3	α	8.5	47.4	49.9	K
9.5	35.7	35.0		8.3	49.6	41.3	K
8.5	37.0	36.8	K	9.4	54.4	5.5	
8.5	51.4	5.4		9.3	55.4	54.2	
9.5	26 9.1	56.7		9.5	55.5	57.2	
9.3	45.3	38.9		7.6	41 2.0	19.9	B
9.3	54.3	9.5		9.4	29.7	50.3	
8.0	56.4	57.7	K	9.5	50.0	19.1	B
9.3	27 1.7	44.4		9.2	42 11.7	9.7	B
9.5	41.2	22.2		8.8	17.9	12.3	
9.5	45.2	10.7		7.5	23.1	52.1	K
9.3	28 4.0	3.0		8.2	39.5	10.3	B
9.5	4.3	57.3		9.4	46.5	10.0	B
9.2	20.5	9.3		9.3	49.0	55.0	
7.6	22.1	29.4	K	9.4	43 9.7	47.5	
9.1	36.9	12.5		9.4	10.7	50.6	B
8.5	29 8.5	12.1	K	9.3	10.9	32.8	
9.3	12.9	53.3	B	8.6	33.9	9.3	L
9.4	33.2	33.8	B	9.4	34.4	8.4	B
9.1	36.6	46.8		9.5	44 12.7	5.1	B
6.6	53.2	24.3	K	9.3	29.0	23.8	
9.5	30 15.9	42.0	B	8.0	49.3	39.7	K
9.5	31 8.8	15.9		9.4	45 7.1	8.7	B
8.8	10.2	35.0		9.5	22.5	48.5	B
9.3	11.5	11.9		9.0	38.7	23.2	
	+	+			+	+	
10 pr.	30.82	1.94		10 pr.	30.81	2.15	

m	4121—4180 20ᵐ—21ᵐ ′ ″	−0° ′		
8.0	46 1.5	13.1	K	
8.5	47 18.5	42.0	K	
9.5	19.6	56.6		
9.3	41.7	44.0		
9.3	48 45.0	46.2	K	
8.2	45.2	55.5	K	
9.4	49 15.5	55.8		
9.5	24.9	52.3	B	
8.5	27.4	37.8	K	
8.2	28.4	2.9	B	
9.3	35.1	50.6		
6.8	46.1	5.3	K	
9.5	54.8	57.9		
9.3	50 34.8	35.3	B	
9.2	51 30.3	46.5	K	
9.0	30.5	59.0	K	
9.0	46.0	59.5		
9.3	58.1	3.2		
9.4	52 5.3	13.4	B	
9.2	23.3	46.1		
9.3	43.8	47.7		
9.3	48.5	9.0	B	
8.8	49.0	35.2		
9.3	52.9	4.5		
9.0	53 39.3	54.4		
9.0	52.8	43.9		
9.3	57.0	20.7	B	
8.8	54 38.9	34.2		
9.5	55 24.3	2.9		
9.5	56 16.4	15.4		
* 9.3	50.3	27.9		
9.3	57 35.8	6.9	B	
9.0	52.0	6.0	K	
9.5	58 1.9	46.0		
9.0	13.8	37.0		
9.5	28.0	37.1		
9.4	41.6	10.5		
9.5	48.1	18.7		
9.0	52.6	48.4	K	
9.2	59.0	11.2		
7.0	59 7.3	40.8	K	
9.2	30.1	10.2		
7.2	0 7.6	43.6	K	
9.0	29.1	55.7		
9.2	45.4	16.8		
9.2	1 6.7	54.2		
9.5	18.3	41.8		
9.3	20.4	37.0	α	
9.0	24.3	9.0		
9.0	26.4	21.7		
9.3	44.6	47.2	B	
9.0	44.8	35.9		
7.3	49.0	49.3	K	
9.3	2 21.5	4.9	B	
9.3	3 8.8	14.7		
9.3	50.4	14.7		
9.2	4 30.9	39.7		
9.2	38.6	31.0		
9.2	39.2	3.7		
9.5	51.0	36.2	B	
	+	+		
10 pr.	30.80	2.32		
4150ᵃ 9.6	56 37.2	6.9	B	

m	4181—4240 21ᵐ ′ ″	−0° ′		
8.9	4 52.5	5.3	B	
9.5	5 8.0	49.5	B	
9.5	42.5	43.5	B	
9.0	6 19.5	14.7		
8.7	50.0	15.4	K	
6.7	7 12.0	29.3	K	
9.4	16.7	29.1	B	
9.5	25.5	49.4		
8.4	8 4.4	51.2	K	
8.8	37.0	23.4		
9.5	9 3.4	56.9		
9.3	20.0	41.8		
9.3	35.5	1.9		
9.5	10 28.5	48.4		
8.5	33.0	26.8	L	
9.3	43.5	25.8	α	
9.2	11 35.9	35.4	B	
9.3	52.4	11.6		
9.2	12 39.0	40.0	K	
9.0	40.0	30.7	K	
9.5	52.2	20.2		
9.3	13 32.0	12.6		
8.8	47.0	23.0		
9.5	14 12.5	40.0		
9.0	15 9.5	32.5		
9.1	16 18.1	4.5		
8.9	19.3	3.5	B	
9.3	33.5	36.2		
9.5	34.0	49.1		
9.3	40.0	25.8		
8.7	17 9.4	2.1	K	
9.5	10.3	8.4		
9.3	44.8	51.7	α	
8.1	18 8.5	51.1	K	
6.3	27.1	5.3	K	
9.5	40.0	47.1		
9.3	40.8	22.0		
9.5	19 35.8	8.5		
9.0	50.0	14.0		
9.5	20 3.5	25.5		
9.5	43.0	54.3		
9.5	43.8	29.6		
9.3	21 34.0	34.8		
9.5	22 5.2	56.2		
9.2	19.8	57.1		
9.0	20.7	29.3		
9.5	41.0	8.4		
9.5	57.0	23.0		
9.0	23 18.0	33.2		
9.3	18.5	21.7		
9.2	54.5	10.6	B	
9.5	24 38.7	1.3		
9.3	40.5	43.5	B	
9.2	42.5	25.0	B	
9.2	25 4.5	5.1		
9.5	13.2	4.8		
9.4	26 22.4	30.3	B	
8.3	30.8	25.5	B	
9.3	29 2.5	8.1		
9.5	57.2	35.9		
	+	+		
10 pr.	30.79	2.53		

m	4241—4300 21ᵐ ′ ″	−0° ′		
7.7	30 12.2	2.8	K	
9.5	24.8	55.9		
9.2	42.0	2.5	K	
8.8	51.2	59.2	K	
7.3	32 4.2	42.8	K	
9.5	7.2	21.0		
9.3	33 30.8	1.8		
9.5	32.0	10.5		
7.5	34 30.3	19.2	B	
9.3	38.0	21.5	B	
7.8	35 2.7	13.0	K	
9.1	38.3	43.5	B	
9.5	52.5	47.3	B	
8.5	36 2.2	36.2	B	
9.3	10.2	22.7		
9.3	14.8	15.1		
7.5	15.0	6.9	K	
9.3	36.0	19.7	B	
9.2	36.3	47.3		
8.8	55.5	30.4		
8.5	37 57.3	53.6	K	
9.2	39 1.2	54.1		
9.5	48.5	5.8		
9.5	55.0	48.5	B	
9.4	40 18.4	3.3	B	
9.4	55.0	54.5	B	
9.5	58.2	58.4		
8.5	58.2	27.6	K	
8.8	41 31.8	56.6	K	
9.2	38.3	4.4	b	
9.5	42 5.2	42.5		
9.3	20.0	10.4	B	
9.2	23.3	58.7		
9.3	25.5	19.3		
9.2	43 31.2	59.0	B	
9.5	44 31.3	22.0		
9.3	37.3	25.1		
9.2	46 2.8	54.5		
8.8	8.2	3.9	K	
9.3	47.2	23.7		
9.5	47 38.7	10.8	B	
9.5	53.5	54.4		
9.5	48 16.2	20.3		
8.0	26.3	23.0	K	
9.3	28.5	41.9	B	
8.8	49 39.7	5.7	K	
9.0	46.5	0.4	K	
8.3	50 28.3	4.9	Kb	
8.2	51 15.0	8.6	K	
8.6	31.7	35.6	K	
9.0	37.8	29.3		
9.5	39.0	0.5		
9.5	41.5	55.7		
9.2	53 32.7	36.4		
9.3	33.3	53.9		
6.0	41.0	4.9	K	
8.3	54 24.2	20.3	K	
9.2	55 29.0	36.2	K	
* 9.3	59.0	26.2		
9.3	56 54.2	39.0		
	+	+		
10 pr.	30.79	2.76		
4298ᵃ 9.7	55 31.9	43.2	B	

21ˢ — 23ˢ —0°

4301—4360					4361—4420					4421—4480					4481—4540					4541—4600				
	21ˢ—22ˢ		—0°			22ˢ		—0°			22ˢ—23ˢ		—0°			23ˢ		—0°			23ˢ		—0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	57	15.5	44.2		9.2	20	10.3	4.0		9.5	41	24.6	49.6		9.4	5	16.4	15.6		9.5	31	28.7	46.3	
9.0		52.7	50.4	K	9.3		26.6	13.1		9.0	42	10.0	26.5	*B*	9.5		23.8	10.2		9.5		29.2	59.4	
8.0		59.0	27.2	*B*	9.2		27.4	31.4		8.6		26.5	54.5	*B*	7.7		34.2	45.1	K	9.0		38.7	40.8	
7.8	58	7.4	4.0	*B*	9.2		55.3	21.7		9.1	43	9.0	52.8		9.2		36.6	56.8		9.4	32	47.1	44.6	
9.5		33.0	39.5		3.3	21	23.3	44.9	K	9.3	44	18.0	10.0		9.4		51.1	35.0		9.5		55.0	10.5	
9.4	59	29.0	37.4		9.2		29.8	16.3		9.5		40.9	59.5		9.5	6	51.8	23.6		9.3		58.4	23.8	K
8.2		41.6	7.6	K	9.1		41.9	52.3		9.3	45	8.9	16.6		9.5		54.2	5.6		7.5	33	15.9	23.1	K
9.4		50.2	44.0		9.0	22	6.4	44.9		9.3	46	9.6	29.5		9.5	8	7.1	3.6		9.3		35.8	23.1	
9.5	0	8.2	32.0		8.5		7.1	57.7	K	9.3		13.7	35.4		9.2		23.4	50.1	K	9.3		37.0	5.2	
8.4	1	14.5	38.3	K	9.2		22.5	32.9	*B*	9.0		27.4	14.9		~~9.3~~		~~26.9~~	~~6.9~~		9.1		45.5	1.9	*b*
8.1		15.1	22.5	K	7.7		43.9	35.9	K	9.2		43.7	58.0		9.0		32.6	7.0		9.4		47.8	7.6	
9.0		16.3	28.8		9.0	23	13.8	25.6		8.5		48.6	20.4	K	9.5	9	3.5	48.7		9.3		53.5	31.2	
9.3		22.2	14.6		9.5		23.1	44.9		9.0	47	20.5	3.0		9.5		33.8	51.8		8.8	34	28.5	47.9	K
8.9		57.3	1.2		8.8		56.1	30.3		9.5	48	23.7	20.2		9.5		59.1	34.0		9.5		33.2	4.3	?
9.0	2	9.9	10.8		9.5	24	34.8	48.0		9.5	50	30.7	5.8		9.5	10	11.7	2.1		9.5		34.2	27.8	
9.5		48.7	34.5		9.5		36.1	58.4		9.5		33.3	22.1		9.3		41.2	17.5	*a*	9.5		35.5	8.2	
8.9	3	49.3	15.1	*B*	8.8		40.5	21.0		9.4		51.8	6.5		9.0		52.4	49.3	K	9.1	35	15.3	3.2	
9.4		51.1	50.0		9.5		50.5	21.0		9.5	51	2.8	45.6		8.7		55.5	15.7	K	8.5		30.6	33.6	K
9.1	4	37.2	36.2		9.5	25	10.1	36.0		9.2		4.5	58.5		9.2	11	1.5	15.7	K	9.5		31.8	1.6	
9.5	5	18.7	32.8		8.7		56.9	29.9		9.5		52.2	38.1		9.4		18.5	16.8	*a*	8.1		53.0	57.8	K
9.5		27.0	33.3		9.2	26	39.9	30.5		8.8	52	9.7	22.6		9.3		34.9	55.7		8.3	36	53.5	5.4	K
7.4		54.1	27.8	K	9.3		55.9	48.3		9.5		51.1	10.7		9.1		48.6	30.6		9.5	37	22.8	4.8	
9.1	6	10.0	24.7		7.5	27	12.1	7.7	K	6.8	53	13.7	34.8	K	9.4	12	50.9	37.0		8.2	38	34.7	31.9	K
9.0		49.1	18.2		3.9		55.5	52.2	K	9.3		54.1	28.1		9.1	13	11.5	4.6	*b*	9.4		49.0	55.9	
8.0		55.2	39.7	K	9.0	28	45.5	34.8		8.3		58.7	40.1	K	9.3		17.4	37.5		9.0		53.5	13.2	
9.0	8	8.7	33.3		8.2		52.6	57.2	K	9.5	54	1.7	12.7		9.5		26.8	55.0		7.9	39	10.2	16.3	K
8.5		26.5	41.0	*H*	8.0	29	14.2	22.8	*B*	9.1		30.4	5.4		9.5	14	52.0	17.2		9.5	40	7.6	22.8	
9.1		29.1	12.7		8.6		52.5	51.4	K	8.8		37.0	22.8	K	9.4	15	48.5	38.0	✓	9.3		16.5	36.2	
9.0	9	20.3	11.8		9.2		55.6	52.8	*a*	7.8	55	0.3	19.7	K	6.7	16	6.4	29.8	K	9.4	41	23.5	40.6	
9.1		21.1	28.2		9.3	30	0.7	30.7		9.0		4.0	21.9		9.5		29.0	7.6	B	8.7		31.7	21.3	
9.5		52.0	0.7		9.3		4.6	30.4		9.2		18.2	31.5	B	9.0		31.0	29.6	K	9.3		58.8	54.5	
9.5		58.3	9.8		9.5		9.4	43.6		9.5		37.0	35.8		9.5	17	11.8	9.6	⌐	9.5	42	13.2	14.0	
7.0	10	39.2	57.1	K	9.2		15.8	45.4	B	9.5	56	4.2	35.2		9.5		56.8	7.9		9.5		42.5	36.5	
9.5	11	10.5	1.6	*B*	9.3		20.0	29.2		9.1		32.9	7.5	K*b*	8.7	18	10.6	16.1	K	9.5		46.5	15.7	
9.5		24.5	9.8		9.3		22.7	56.4		9.5	57	22.3	41.2		9.2	19	57.4	25.5		9.5	43	16.2	2.3	
9.5		41.9	38.0		9.3		58.2	4.0		9.5		51.6	36.6		8.9		59.0	4.6		9.5		27.2	57.8	
9.5		43.3	5.2		9.0	32	40.2	53.4	K	9.5		52.8	41.8		9.3	21	30.0	50.5		9.5	45	11.5	44.9	
9.0		47.4	11.9		9.5	33	7.4	14.7	K	9.5	58	5.7	58.0		9.5	22	0.7	30.3		9.2		23.9	5.2	K
9.3	12	42.4	14.4		8.1		11.7	49.8		9.5		18.9	34.7		9.5		49.0	55.6		9.2		31.9	12.5	*H*
9.5		48.4	47.6		9.3		41.4	59.7		9.5		28.2	9.3		9.0		53.2	57.9		9.4	46	9.1	35.5	
9.3		52.5	49.5		9.5		53.2	15.7		8.8	59	8.8	58.7	K	9.5	23	13.1	18.5		7.9		26.3	12.5	K
7.6	13	0.8	47.7	K	9.3	34	7.8	5.5		9.3		18.8	13.6		9.5		18.5	25.0		9.2		39.9	34.9	
8.3		14.5	10.7	K	9.0		12.4	38.3		9.5		53.1	7.1		8.8	25	31.5	37.1		9.0		44.5	23.8	
9.0		30.1	33.9		9.5		36.2	15.3		9.5	0	25.0	8.5	B	9.0		32.9	19.8	K	8.9	47	13.3	2.2	K
9.5		34.5	4.8		7.7	35	18.1	39.6	K	9.5		33.6	39.6		9.4		36.8	42.6		6.2		22.7	42.2	L
8.6		35.3	3.6	K	7.5		24.3	30.6	K	9.3	1	24.4	57.2		9.3		46.8	33.4		9.3		32.5	47.4	
9.1		49.3	52.0		8.0		31.6	19.9	K	9.4		25.4	37.0		9.5		51.8	9.0		9.3	48	2.9	9.8	
9.2		54.8	54.8		9.0		43.1	23.5		9.0		27.6	12.6		9.5	26	28.5	14.6		9.0		9.5	6.2	
9.5	14	10.9	29.3		9.5	37	37.6	30.2		9.4		57.9	19.0		9.5		47.2	3.5		9.5		11.6	58.8	
8.0		15.9	4.8	K	9.0		50.2	21.8		9.4	2	8.4	1.1		9.1		54.1	35.5		9.5		35.3	50.6	
8.8		55.8	38.4		9.5		56.2	4.5		9.5		18.8	36.7		9.3	27	12.1	55.6		9.2		37.8	7.8	
9.5	15	16.5	38.1		9.5	38	30.5	58.8		9.3		19.5	58.2		9.0		41.4	36.4	K	8.8	49	1.1	19.4	L
7.5	16	2.3	6.7	K	9.5		35.8	19.9		9.4		40.5	12.6		9.5		56.1	28.9		9.0		10.5	7.7	
8.2		18.4	10.8	K*b*	9.0		47.1	36.8		9.2		42.0	5.8	*b*	9.5	28	26.8	20.4		9.1		27.9	39.1	
9.5	17	45.2	47.7		9.2		49.9	39.2		8.8	3	25.7	21.8	K	9.5	29	6.5	32.2	*R*	9.3		54.3	7.1	*R*
8.7		54.8	44.5	K	9.4		50.5	15.3		8.5	4	19.7	33.7	K	9.5		34.6	57.0		8.6	50	38.6	56.2	K
9.5		56.8	0.8		9.4		57.2	16.2		9.5		25.9	12.6		9.4	30	14.7	3.1		9.4		53.9	28.9	
9.3	19	22.9	14.3		9.3	40	15.5	26.5		8.7		42.9	59.0	L	9.0		52.1	0.9		9.5	51	6.0	46.3	
9.0		26.5	1.8		9.3		21.0	14.3		9.3		45.9	46.2		9.5	31	12.8	6.1		9.4	52	35.0	52.1	
9.2	20	4.8	18.4	*b*	9.3	41	18.1	0.6		9.3		50.5	51.4		9.4		22.2	28.8		9.5		44.3	51.7	
10 pr.		+ *30.78*	+ *2.96*		*10 pr.*		+ *30.76*	+ *3.09*		*10 pr.*		+ *30.75*	+ *3.21*		*10 pr.*		+ *30.74*	+ *3.28*		*10 pr.*		+ *30.73*	+ *3.33*	

4601—4604					4605—4608					4609—4612					4613—4616					4617—4620				
	23ʰ		−0°			23ʰ		−0°			23ʰ		−0°			23ʰ		−0°			23ʰ		−0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	53	0.0	35.6	*a*	8.0	53	44.6	52.5	K	8.9	54	40.1	23.6	B	9.3	56	19.9	11.4		9.5	57	29.8	16.9	
9.5		1.5	5.7		8.8	54	2.0	30.1	K	9.3		45.4	20.1	B	9.3		21.9	2.2		9.5		39.6	25.3	
8.1		13.7	34.5	K	9.5		10.6	56.4	K	9.5	55	3.5	24.6		9.0		48.5	48.8		8.2	58	43.5	40.7	K
9.4		14.0	29.4		9.0		32.5	40.5	K	9.0		51.8	57.8		8.5	57	18.8	44.7		9.0	59	44.2	28.0	
												+	+											
										10pr.		*30.72*	*3.34*											

Zone + 0°

1—40					41—80					81—120					121—160					161—200				
	0ʰ		+0°			0ʰ		+0°			0ʰ		+0°			0ʰ		+0°			0ʰ — 1ʰ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	0	4.8	4.2		9.3	13	51.9	33.4		9.5	27	52.0	20.2		9.5	41	1.8	12.9		9.3	52	45.3	56.8	
9.1		12.5	32.5		9.5	14	2.8	41.4		9.5	28	22.2	28.2		9.2		17.5	51.0		9.0		53.0	30.7	
8.1		14.7	18.0	K	8.9		22.2	6.5	K*b*	8.8		25.0	49.1		9.0		18.0	13.6		9.5	53	14.0	58.7	
9.4		41.0	8.6	B	9.5	15	10.8	20.5		9.5		31.8	33.5		9.5		29.9	11.8		9.5	54	4.5	23.8	
9.3		41.2	56.1		9.5		12.2	3.2		9.0		47.0	35.5		9.3		59.1	12.3	B	8.8		6.3	41.0	
9.5	1	15.0	4.9		9.5	16	9.0	30.8		9.5	29	33.0	47.1		9.5	42	9.2	38.1	B	9.5		33.5	35.5	
9.3		23.1	26.7		9.5		20.9	25.0		9.5		48.0	33.2		8.8		25.3	53.0		9.5		51.7	14.1	
7.9	2	2.4	26.1	K	8.8		27.6	44.0		9.5	30	4.0	47.4		8.8		44.0	25.0		9.5	55	2.5	55.4	
9.2	3	46.9	27.6	*b*	8.0		51.3	45.2	L*b*	9.2		8.1	56.0		9.5		44.5	5.6		9.5		39.9	20.0	
9.5	4	6.9	12.1		9.0	17	9.0	54.9	B	9.1		20.2	49.5	B	8.3	43	58.5	7.7	K*b*	8.8		48.5	16.4	
9.5		42.7	45.9	B	9.5		44.7	7.6		9.5		31.1	28.5		9.5	44	38.2	2.0		9.5	56	12.0	3.2	
9.5		51.2	21.5		9.0		59.6	33.6		9.5		39.5	20.0		9.5		53.0	13.7		9.3		12.3	7.7	
9.5	5	11.0	59.9		9.5	18	35.6	6.6	?	9.0		57.4	42.3	B	9.0	45	1.0	19.1		9.4		19.9	48.6	
9.5		27.0	35.4		8.3		46.8	21.6		8.5	31	0.2	29.2	K*b*	9.5		50.2	2.5		6.0		24.0	34.8	K
9.5		43.0	59.0		9.5	19	12.6	36.4	B	9.4		20.3	44.0		9.4		50.7	1.2	B	9.5		34.8	44.9	B
9.0		49.4	19.7		9.5		17.9	22.9		8.2		22.9	9.0	K	9.3	46	0.8	6.7		9.2		37.8	43.9	B
8.8	6	6.5	2.8		9.5		23.0	14.0		9.5	32	19.5	31.7		9.5		1.0	27.5		9.4		56.9	59.8	B
9.5		8.9	41.8		8.7		59.3	35.9		8.5		22.5	13.6	K	9.5		41.0	40.7		8.7	57	8.0	30.6	
6.8		21.9	34.8	K*b*	9.5	20	6.5	22.0		9.5		50.5	10.4		9.5		50.5	17.3		8.7		21.8	48.6	B
9.5		26.7	30.7		9.5		28.5	26.2		8.3		57.5	21.2	K	8.5	47	21.0	18.5		8.8	58	11.0	26.1	K*b*
8.7		34.8	4.1		9.5	21	11.8	13.7		9.2	33	28.0	22.3	K	9.3		22.2	13.6		9.0		36.8	56.1	B
7.2	7	10.9	29.7	L	9.5		26.5	35.5		9.3	34	1.0	12.5		7.9		36.0	0.4	K	8.8		49.5	41.1	
9.5		38.9	21.8	B	9.5		28.7	38.0		7.9		9.7	57.0	L*b*	9.5		48.2	9.1	B	9.4	59	2.4	47.8	B
9.5	9	14.6	35.7		9.5	22	0.5	41.0		8.8		26.3	58.8		9.3	48	47.5	25.7		9.4		2.9	51.3	
9.5		46.6	32.0		9.5		23.5	31.2		9.5		27.5	29.0		9.3		59.0	55.7		8.3		47.0	36.2	K
9.3		48.8	55.6		9.5		43.2	2.8		8.0		37.5	14.3	K	8.8	49	24.7	53.7		8.8		49.7	4.1	
9.0	10	14.8	31.2		9.0	23	28.0	49.5		8.3		44.0	15.7	K	9.2		42.0	19.9	B	9.5		54.2	9.2	
7.0		21.0	53.0	P	9.3		41.0	43.9		8.5	35	13.2	54.0	L	8.0		47.5	35.5	P	9.0	0	17.0	39.3	
9.5		34.8	4.1	B	9.3	24	17.4	45.5		9.0		16.0	5.9		7.0	50	14.0	59.6	K	9.3	1	5.0	41.1	
9.4	11	7.1	42.3	B	8.3		29.0	43.1	K	9.1		22.1	36.1	B	9.3		21.4	3.5		9.1		17.8	52.0	a B
9.5		7.3	29.0		9.1		46.5	23.1	B*b*	9.3		22.5	57.4		9.5		25.6	1.2		9.5		34.0	37.9	
9.5		23.0	15.7		9.5		56.5	19.2		8.8		25.6	3.5		9.0		34.5	24.7		9.5		38.5	14.6	
9.5		58.3	6.9		9.3	25	38.0	56.8		9.2		28.3	58.0		9.5	51	18.3	37.0		9.5		59.5	28.5	
7.8	12	31.0	46.9	K	9.3		53.5	3.9		8.5		30.0	30.0	K	9.0		24.0	49.3		9.0	2	18.0	28.5	
9.2		31.1	3.8		9.5	26	31.0	39.0		8.5	38	10.0	54.8	K	9.5		28.5	19.1		9.5	3	29.4	51.4	
9.5		35.6	11.0		9.5		39.5	17.2		9.5		11.1	2.1		9.2		32.7	3.1		9.2	5	0.1	53.8	*b*
8.5		35.9	21.0	K	8.3		57.5	12.5	K	9.5		45.5	12.0		9.5		52.5	8.2		8.5		2.2	13.4	
9.2	13	27.7	6.4	K	9.5	27	5.0	25.7	B	8.5	39	20.5	46.0		9.0		56.6	0.3	K	8.5		35.9	18.6	K
9.1		32.8	23.0		9.5		5.5	36.2		9.5		40.5	55.7		7.8		58.6	0.1	K	9.5		53.4	38.1	
9.5		37.1	11.5		9.0		26.5	1.4		9.5	40	59.9	6.2		9.5	52	35.9	21.0		9.3		54.5	6.2	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.72*	*3.34*		*10pr.*		*30.73*	*3.33*		*10pr.*		*30.74*	*3.30*		*10pr.*		*30.74*	*3.27*		*10pr.*		*30.75*	*3.24*	

201 — 260

m	1ᵛ		+0°	
	′	″	′	
9.4	6	6.1	1.2	
9.5		29.6	3.7	
9.0		34.1	55.7	
8.5		42.4	43.7	K
9.5		53.9	43.7	
9.5	7	13.2	1.8	
8.8		38.4	28.3	K
9.3	8	2.4	17.5	
9.0		6.4	42.7	
6.8		9.8	8.8	K
8.9		19.5	10.3	B
9.5		23.2	55.1	
9.5		39.9	8.0	
9.3	9	19.4	32.8	
7.8	10	15.9	24.5	K
9.0	11	1.9	12.4	K
9.5		15.2	1.4	B
9.3	12	36.8	59.8	
9.5	13	29.8	28.3	
9.5		38.4	20.0	
9.2	14	19.9	1.9	
9.5		19.9	33.9	
6.5	15	12.1	58.3	P
9.0		12.9	32.8	
9.3		21.4	25.5	
8.8		29.4	59.4	
8.3		42.4	46.5	
9.0		59.4	59.6	B
9.5	16	16.9	8.8	
9.4		41.9	15.0	B
9.3		43.4	21.4	
9.4		47.4	19.3	
8.0	17	54.4	43.0	L
9.5	18	33.4	22.7	
9.5		34.7	47.5	
9.3		46.4	30.4	
9.3	19	24.4	33.0	b
9.5	20	16.0	13.8	B
9.5		57.8	54.0	
9.5		59.4	19.1	
9.5	21	52.0	9.3	
9.5	22	7.4	52.7	
8.5	23	3.9	37.1	K
9.0		28.8	8.6	R
9.3		34.4	35.4	
8.7		40.5	54.7	L
9.0		58.5	13.4	
9.5	24	12.6	1.1	
9.3		39.4	35.3	
8.8		39.4	55.4	R
8.0		52.4	50.4	K
9.5	25	5.5	14.1	
8.8		32.4	16.5	
9.2		41.9	59.1	B
9.4		49.0	59.3	αB
7.8	27	21.2	12.7	K
9.0		52.8	32.1	
8.5	28	28.1	31.8	Kb
9.3	29	3.6	28.6	
9.5		21.6	42.7	
10pr.		+ 30.76	+ 3.15	

261 — 320

m	1ᵛ		+0°	
	′	″	′	
9.5	29	38.9	3.8	
9.5	30	10.1	39.5	
9.3		44.0	27.8	B
9.4		51.9	24.5	
9.5	31	17.2	6.0	
9.5		25.8	58.5	
9.0	32	4.6	12.0	K
9.5		36.9	49.7	α
8.9	33	0.6	22.1	
8.5		22.6	54.0	K
9.2		37.2	11.3	
8.7		51.7	0.5	K
9.2	34	22.1	21.7	K
9.5	35	4.1	20.7	
9.5		6.8	59.8	
9.4		12.8	28.5	
9.5	36	17.5	43.2	B
8.5		21.1	10.5	K
9.3		35.5	22.5	B
9.5		45.6	39.5	
9.2		58.3	40.5	b
9.5	37	27.7	1.1	B
9.5	38	5.2	19.6	
9.5		13.7	55.7	
9.5		33.2	54.5	
9.5	39	16.5	47.7	
9.3		34.2	15.7	B
9.5		50.2	1.7	
8.0		54.5	5.1	L
9.5		58.6	37.6	B
9.3	40	3.7	16.1	B
9.0		37.1	47.1	
9.5	41	21.1	19.3	
8.0		33.6	37.4	Kb
9.0	42	34.6	15.5	K
9.5		57.2	15.5	
9.2	43	57.2	5.3	b
9.0		59.6	42.0	
9.5	44	13.6	47.1	
9.2		16.6	29.0	
9.5		52.1	9.9	
8.5	45	9.5	31.5	K
9.4		43.1	47.2	B
9.5	46	48.6	3.0	
9.0		55.6	52.1	
8.7	47	0.2	56.2	K
8.9		24.2	4.2	
9.4		25.3	53.4	B
9.5		35.0	10.1	
9.3	48	22.4	11.5	B
9.3		31.9	3.7	B
9.3	*)	33.3	37.0	
8.5	49	14.1	56.6	K
9.4		26.7	51.7	B
9.4		31.1	56.3	B
9.5		34.1	4.0	
9.0		39.3	57.5	
9.5		50.3	54.4	
9.5	50	6.1	31.1	
9.3		24.5	2.0	
10pr.		+ 30.77	+ 3.03	

321 — 380

m	1ᵛ — 2ᵛ		+0°	
	′	″	′	
9.1	50	58.0	3.2	b
9.5	51	30.0	0.2	
9.5		48.8	37.7	
9.5		49.6	47.8	
9.5	52	26.4	0.7	B
9.4		27.1	26.4	B
9.5		29.3	6.5	B
9.5		38.8	49.6	
9.5		39.8	10.6	B
9.5		40.9	34.0	
9.5	53	36.1	12.3	
9.5		54.1	47.8	
9.5	54	3.1	46.8	
9.2		9.0	12.5	B
8.7		11.1	38.4	Kb
9.5		31.4	14.7	
9.5	55	9.4	33.5	
9.5		12.0	0.8	
8.8		38.6	39.2	K
9.5		58.1	53.4	α
9.0	56	4.8	54.8	K
9.3		9.1	12.7	
9.0		19.4	45.5	
9.0		35.4	53.4	K
9.5		41.2	20.3	
9.4		53.1	1.2	
9.3	57	10.0	9.0	
9.5		49.6	53.7	
9.5	58	12.6	36.0	
8.6		21.0	7.4	K
9.0	59	16.8	28.0	
8.0		20.7	44.8	B
9.5		51.2	10.2	
9.5		54.6	27.3	
9.5	0	42.1	55.5	
8.3	1	16.6	15.5	K
9.5		48.1	12.3	
8.7	2	16.7	6.4	K
9.5		23.6	46.0	
9.5		44.0	44.6	
9.5	3	50.6	24.5	
8.7		54.4	59.5	K
9.5	4	7.6	11.6	
9.2		32.1	46.1	b
9.5		54.7	35.3	
9.5	5	8.6	46.1	
9.2		47.6	27.0	b
9.5	6	2.1	32.4	
7.5	7	9.1	58.7	P
7.2		44.0	3.0	Kb
9.0	8	19.7	59.1	
9.2		53.5	1.8	
8.5		57.5	10.1	
9.2	9	32.0	19.3	
9.5		39.2	20.6	
9.3		42.0	6.9	
9.0		46.1	50.0	K
9.2	10	9.1	27.7	
8.8		14.6	36.0	
9.5		23.1	23.8	
10pr.		+ 30.78	+ 2.90	

381 — 440

m	2ᵛ		+0°	
	′	″	′	
9.5	11	7.1	31.1	
9.3		17.6	35.7	
9.5		28.2	22.4	
9.5	12	13.0	51.3	
8.8		56.5	55.4	K
9.4	13	12.7	27.0	
9.1		19.1	44.8	b
9.3		35.8	59.2	
9.3		36.0	21.8	
9.5		46.9	7.5	
8.2	14	22.0	18.4	P
9.5	16	5.2	2.3	
9.5		11.6	28.0	
9.5		21.1	51.3	
8.8	17	51.6	42.0	K
8.8		54.1	55.1	K
9.4	18	4.3	25.0	
9.3		7.1	16.4	
9.2		10.4	34.7	b
9.5	19	17.4	5.4	
9.5		54.6	16.8	
9.5		59.3	5.8	
9.5	20	41.6	59.6	
8.5		52.7	50.1	
9.5	21	26.3	11.3	
9.3		27.9	5.0	
9.5		36.1	53.3	
8.2		52.7	8.1	K
9.5	22	31.1	31.5	
9.0	23	16.6	11.2	
9.4		35.3	55.9	B
9.5		37.9	54.9	
9.5		39.0	5.8	
8.4		48.5	52.1	B
7.5	24	0.6	28.0	K
9.5		8.6	39.8	
8.8		14.7	5.8	
9.5		34.6	30.4	
9.3		54.7	22.1	B
9.5	25	4.1	43.7	
7.5		15.2	23.0	Kb
8.5		18.1	50.6	K
9.5		42.2	16.2	
9.5		45.2	35.0	B
9.5		54.7	29.2	
9.2	26	26.0	41.0	
9.3		34.0	47.5	
9.3		41.3	27.5	
9.0	27	18.7	6.7	
8.0		25.1	35.7	K
9.0		43.6	29.4	K
9.5	28	32.4	51.9	
9.5	29	16.4	56.1	
9.5		20.4	35.7	
9.2		22.1	27.0	b
9.5	30	27.4	59.8	
9.5		31.7	24.1	
9.5	31	2.1	20.2	
9.5		26.1	54.0	
9.5		47.0	23.3	
10pr.		+ 30.78	+ 2.71	

441 — 500

m	2ᵛ		+0°	
	′	″	′	
9.0	31	55.6	12.8	B
8.5	32	4.9	43.6	K
9.3		24.5	13.3	
9.0	33	12.8	33.4	
9.0		30.4	18.2	
9.4	34	25.1	53.4	
9.5	35	20.3	50.2	
9.0		56.5	40.4	B
9.5		56.7	19.6	
9.5	36	10.5	36.4	
9.5		49.8	28.2	
9.5		55.0	22.1	
8.8	37	2.7	53.1	
9.5		6.8	42.2	
9.0		54.9	51.1	
8.9	38	3.0	56.8	K
9.5		42.1	56.0	
9.5	39	14.9	31.5	
8.3		59.9	27.5	K
8.8	40	11.4	4.5	
9.5		28.7	18.9	
9.0		34.4	24.1	
9.0		40.3	41.9	
9.3		50.7	3.0	
9.5	41	3.0	55.4	
8.6		47.9	4.3	
9.0		57.0	46.1	
8.3	42	9.0	48.2	
7.3		10.9	19.2	Kb
9.3		52.7	25.8	
8.0		52.4	21.8	K
9.5	43	19.3	8.8	
9.5		35.7	17.8	
9.5		36.7	15.9	
8.8	44	32.5	41.6	
9.1		36.7	13.8	B
9.5		50.1	40.4	
9.3	46	41.4	41.8	
9.5	47	16.2	19.8	
9.5		51.5	11.8	
8.7		59.0	46.1	Kb
9.5	48	12.5	54.1	
9.5	49	22.7	5.4	
9.1		34.1	54.9	b
9.5		56.5	22.9	
9.1	50	39.7	47.2	B
9.2	51	37.2	47.7	B
9.3		38.5	56.1	
9.3		44.2	3.6	
8.5		48.8	39.7	Kb
9.0		57.3	5.4	
8.9	52	19.5	3.0	B
9.0		34.7	18.5	
9.1		50.2	50.0	
8.3		50.6	24.6	K
9.4	53	16.7	40.5	
8.5		20.4	25.5	
9.5		46.2	9.9	
8.0		58.3	34.8	K
9.5	54	30.4	9.9	
10pr.		+ 30.79	+ 2.53	

*)	9.5	48 33.3	4.2	
327ᵃ				
9.6	52	36.5	0.7	B

+0°

2° – 4

501 – 560					561 – 620					621 – 680					681 – 740					741 – 800				
	2° – 3°		+0°			3°		+0°			3°		+0°			3° – 4°		+0°			4°		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	54	49.1	38.4		9.5	10	29.8	59.5		9.5	29	53.2	7.6		9.5	49	59.7	20.8		9.0	15	51.8	9.4	
9.0	55	9.0	16.3		9.5		59.6	17.0		8.2	30	10.7	38.9	Lb	9.5	50	8.8	56.3		9.5		59.7	38.7	
8.0		42.1	47.0	K	9.5	11	22.5	43.0		9.2		17.0	17.1		9.5		14.7	16.7		9.5	16	42.0	5.4	
9.3		46.4	28.7		9.3		45.5	22.3		9.1		23.1	43.5		8.5	51	27.9	20.2	B	9.5		46.0	3.8	
9.5		58.4	41.0		8.3	12	19.5	39.7	K	9.0		23.7	29.8		8.7		46.2	31.9	Kb	9.5		50.0	53.7	
9.0	56	0.4	57.2	K	9.3		21.7	27.6		9.5		23.7	2.1		9.4	52	5.8	42.3		9.5	17	6.6	23.7	
8.7		24.3	27.2		7.6		34.8	57.0	K	9.0		28.8	56.5		8.7		32.1	58.9	K	9.5		8.0	15.4	B
9.5		45.3	59.1		9.3	13	2.5	38.1		8.7		49.1	58.2		9.1	52	45.3	58.0	K	9.5		34.0	53.3	
9.5	57	1.4	30.1		9.3		5.7	7.7		9.4		56.2	30.5	B	9.3	55	41.7	6.8		9.3		53.9	57.2	
9.3		37.5	9.9		8.0		24.3	38.2	K	8.5	31	30.1	18.7	K	9.1	56	20.6	57.8		9.5	18	0.2	15.1	B
8.3		47.1	17.2	Kb	8.3		32.6	33.7	K	9.3		36.9	52.2		9.5	57	5.6	15.8	B	9.5		23.8	52.8	
8.8		50.4	42.8		8.4		45.2	2.1	Kb	9.5		40.3	3.9		8.7		6.3	55.0		9.2		26.5	47.2	K
9.3		54.7	53.5		9.5		48.8	56.5		9.2		47.4	49.1	b	9.2		55.1	3.0		8.2		28.9	40.6	K
9.5	58	25.5	30.3		9.0		56.0	57.7		9.5	32	36.8	48.9	B	9.1	58	13.0	43.6	b	9.0		35.6	20.3	Kb
8.2		30.3	38.8	K	9.3	14	6.6	23.6		9.4		50.0	51.4		9.1		22.9	30.8		9.5		37.5	12.6	
9.5		48.8	14.9		9.3		7.3	41.5		9.3		51.9	31.1		8.6		35.6	25.0	B	9.5		46.6	14.6	
8.5	59	12.1	13.0		9.5		44.8	32.7		9.3		54.8	14.5		9.1	59	30.3	4.2	b	9.0	19	18.9	4.3	
8.8		20.7	44.3		9.0	15	4.4	13.4		9.5	33	8.7	3.5		9.5	0	19.8	14.0	B	8.8		51.9	6.0	
9.5		22.3	57.4		8.3		19.7	38.7	K	9.3		50.2	23.1		9.5		25.0	56.1		9.5		52.5	55.9	
9.3		27.8	22.1		9.3		22.6	9.7		9.0	34	7.1	38.8		8.8		30.7	50.1		9.5	20	25.2	27.4	B
8.8	0	9.4	31.5		7.2	16	11.2	24.3	K	9.5		12.7	59.3	B	8.2	1	14.7	23.8	K	9.3		33.5	1.8	B
7.8		12.4	51.0	K	9.0		13.0	13.2		9.0		13.3	38.8		9.5		41.4	40.0		9.0		34.5	3.3	B
8.8		12.4	39.3		9.5		26.7	3.4		9.5		27.7	4.4		9.5		55.7	6.5	B	9.2		42.4	32.4	Bb
8.5		17.6	17.9	K	9.5		27.2	1.4		9.5		49.8	44.1		9.3		59.8	42.6		9.3	21	7.9	26.2	K
9.5	1	11.8	51.3		9.3		38.8	48.4		9.2	35	55.4	28.6		9.3	2	2.8	48.5		9.5		30.5	46.6	
9.2		12.0	28.1		8.5		45.8	50.0	K	8.8	36	0.2	41.5		9.5		15.8	22.5		9.5		30.6	39.3	
9.5		19.7	12.7		9.0	18	45.3	49.8		9.4	37	45.5	33.3		8.0		49.3	57.5	B	9.1	22	0.0	58.2	a
9.5		21.7	32.8	B	8.8		50.6	43.1		8.9		49.3	4.3		9.3	4	3.2	48.5	b	9.1		1.4	5.4	B
8.6		30.3	33.4	K	9.5	19	1.3	8.8		9.4	38	1.0	18.0		9.1		31.7	3.4	B	9.5		6.8	56.8	
8.9		50.0	53.9		9.3		28.1	56.6		9.6		2.3	10.6	B	7.5		43.0	21.6	K	9.0		24.2	22.2	
8.1	2	21.4	56.2	K	9.5	20	16.7	11.8		8.4		18.4	9.8	K	9.0	5	9.1	21.9	K	9.5		48.0	15.9	B
9.2		49.1	54.5		9.5		23.7	11.0		8.9		34.2	56.5		9.5		11.7	28.9		9.3		49.5	22.2	B
9.3		54.2	32.7		9.5		38.8	53.1		9.3	39	20.4	31.2	b	9.4	6	6.1	49.7	B	9.0	23	5.9	13.1	B
9.2	3	1.7	23.1	B	9.3	21	9.8	33.3		9.3	40	12.8	3.7		9.0		9.6	9.0		9.2		21.2	15.6	a
8.8		54.8	43.8		9.5	22	15.7	6.0		9.1	41	5.8	55.9		9.5		47.5	21.6		9.5		24.8	47.2	
9.3	4	5.6	59.9		9.2		29.3	45.1	a	9.5		31.4	44.9		9.5	7	8.0	22.3		9.3		37.5	9.5	B
8.9		55.6	4.1		8.9		32.4	3.1		9.5		50.2	10.8		9.0		10.5	18.0		9.5		51.7	55.8	B
9.5	5	31.3	43.7		9.0		35.0	39.8		9.4		58.1	16.7		9.5		39.0	52.2		9.5	24	0.0	18.8	
9.5		40.6	24.4		9.0		46.9	13.3		8.3	42	4.9	56.2	K	9.3	8	7.7	16.2		9.5		42.1	26.1	
9.5		42.2	49.4		8.8		47.1	34.9		9.1		39.0	44.5		9.0		21.2	28.2		8.0		56.2	39.9	K
8.4		58.6	53.8		9.5	23	51.5	21.2		8.6		48.4	58.5		7.5		37.0	4.8	Kb	9.2	25	1.7	48.2	K
8.2	6	37.3	13.1	K	8.8	24	29.3	10.9		9.1	43	1.1	39.6		8.5		40.2	13.9	K	9.5		22.0	42.0	
9.3		46.4	43.7		9.2		30.7	8.5		8.8		20.7	34.3	Kb	8.7		44.3	53.2	K	9.3		38.8	10.7	
9.5	7	7.6	12.4		9.5	25	27.2	55.0		8.2		42.4	29.9	K	9.5	9	5.0	19.5		9.3		46.0	8.2	
9.3		21.9	15.5		9.3	26	15.7	29.9		9.1		51.7	37.6		9.5		33.5	12.6		8.5	26	3.6	42.6	K
9.5		22.0	7.4		9.5		22.6	33.9		9.3		54.2	28.0		9.0		44.4	32.7	K	9.5		13.8	48.6	
9.5		24.0	17.7		8.5		55.2	55.1	K	9.5	44	43.2	6.3		9.2		54.6	45.5		8.7		19.7	2.2	K
8.8		31.8	21.1	Lb	8.3	27	7.6	11.6	K	9.2		46.1	49.2		9.2	10	33.0	36.5		9.2		55.8	25.5	
9.5		34.2	29.1		8.8		13.5	26.1		9.5	45	14.5	4.6		8.7	11	0.9	55.9	Kb	7.5	27	1.7	6.6	K
8.8		59.2	19.8		9.3		21.9	48.8	B	9.0		17.5	42.4		9.5		7.0	36.8		9.5	28	14.8	35.1	
9.2	8	10.3	37.3		9.5		59.5	45.2		8.2	46	5.3	57.2	K	9.5		34.2	31.8		9.4		22.0	39.5	B
9.5		27.3	50.1		9.5	28	14.5	8.4		8.9		34.9	33.6	K	9.5		55.7	33.7		9.3		26.4	10.7	
8.7		33.1	13.5	K	9.3		19.6	43.2		9.0		41.0	12.3		9.5	12	28.7	39.4		9.5		27.0	39.0	
9.5		43.6	59.9		9.5		21.3	31.5		9.4		42.1	57.4		8.2	13	36.5	50.5	Kb	8.5		27.6	4.8	K
9.5		59.1	19.5		9.5		35.9	53.1		7.6		53.7	50.5	Kb	8.5		44.9	30.4	K	9.5		46.4	15.0	
8.8	9	15.0	26.7		6.9	29	22.4	6.9	K	9.2	47	13.7	24.8		9.4		47.4	9.1	B	8.7		47.6	18.2	K
9.4		17.6	20.5	B	8.6		30.3	26.2		9.4		51.2	26.6		9.4	14	16.3	16.6	B	9.0	29	14.0	35.4	K
8.6		34.6	53.2	K	9.3		32.5	51.7		8.7	48	40.3	16.2		9.5		35.0	51.2		5.7		45.9	42.6	P
9.3		45.0	52.4	a	9.2		36.8	48.6	B	9.5	49	33.4	5.3		9.4		37.8	13.5	B	8.9		53.0	56.6	
9.5	10	8.9	17.7		8.2		45.8	52.2	L	9.5		57.7	4.0		9.5	15	29.0	23.0		8.3		59.2	16.2	K
		+	+				+	+				+	+				+	+				+	+	
10 pr.		30.80	2.34		10 pr.		30.81	2.15		10 pr.		30.82	1.94		10 pr.		30.82	1.61		10 pr.		30.83	1.37	

801 — 860					861 — 920					921 — 980					981 — 1040					1041 — 1100				
	4^s		+0°			4^s		+0°			4^s — 5^s		+0°			5^s		+0°			5^s		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.3	29	59.6	14.4	K	8.7	41	20.1	29.2	K	9.3	53	40.8	14.8	B	9.5	5	7.9	36.0		8.7	16	23.6	43.4	
9.1	30	11.5	1.3	B	9.3		21.2	55.6		9.5		51.7	42.4		9.5		30.9	0.0		9.2		43.0	3.8	*b*
9.4		16.3	25.1	B	9.5	42	12.8	20.0	K	6.2	54	23.2	31.6	K	9.2		39.4	19.5	K	9.5		51.6	9.7	
9.5		19.5	50.2		9.5		15.6	42.9		8.3		27.7	49.6	K	9.5		46.0	18.9		9.4		54.5	45.2	
9.3		22.6	42.0	B	9.0		22.8	55.9		9.5		34.8	16.2		9.5		49.0	17.0		9.2	17	16.4	34.6	
9.5	31	12.4	26.9		9.2		51.7	41.2		9.5		52.8	10.7		9.2		54.0	21.4	K	8.9		23.4	37.9	
9.5		12.5	24.3		8.7		58.7	47.4		9.5		54.4	26.5		9.5	6	9.4	38.0		9.5		31.2	26.6	
9.5		23.0	12.6		8.5	43	5.5	35.6	K	9.5	55	37.7	42.0		7.0		21.4	23.3	K	9.5		33.0	16.3	
9.5		28.3	19.4		9.5		7.0	24.9	B	9.5		39.1	28.5		9.5	7	16.8	31.1		9.1		34.5	48.8	
9.3		31.6	13.7		9.4		7.4	18.8		9.3	56	11.0	38.9		9.5		20.9	33.1		9.5		44.0	58.2	
8.8		44.1	1.4	K	7.3		16.9	53.9	K	9.5		30.8	34.2		9.5		22.1	18.0		9.5		46.9	2.4	
9.5		57.9	4.4		9.5		18.0	25.9		9.4		31.7	25.6	B	9.2		31.6	16.4		9.5		52.4	57.2	
9.5	32	7.2	11.1		9.2		28.0	19.1	*b*	9.0		53.4	53.4	K	9.2		33.3	58.6		9.3		54.5	11.2	
9.5		12.8	39.1		9.3		55.4	30.6		9.3	57	2.9	53.4	*a*	9.5		35.5	14.5		9.2	18	10.0	14.0	
8.7		38.7	16.1	K*b*	9.3	44	8.3	28.3		9.5		18.2	22.4		9.1		53.5	51.5	*b*	9.4		16.7	35.6	
9.5		49.6	57.4		8.3		20.6	59.6	K	9.3		30.0	55.2		9.5		59.4	13.1		7.0		21.1	23.0	K
8.0	33	28.6	40.7	L	9.5		28.6	38.8		9.5		45.6	36.1		9.0	8	5.4	1.7	K	9.2		36.3	35.6	
9.5		38.9	18.8		8.8		42.2	28.7		9.5		47.3	1.8		9.5		15.9	0.6		8.9		37.9	41.7	
8.7		59.4	32.4	K	9.5		54.6	7.8		var		53.8	58.5	K	9.5		47.7	37.2		9.5		42.0	6.4	*B*
9.5	34	3.7	36.6		9.3		56.4	40.5		8.7	58	7.8	7.9	K	9.5	9	8.3	11.6		9.1		45.9	55.5	K
8.2		9.8	15.6	K	8.8		57.7	42.8		9.5		17.3	50.7		9.3		25.9	7.1		9.4		51.5	0.7	
9.1		16.1	53.8		9.3	45	3.6	58.9		9.5		28.5	15.2		9.5		27.4	13.5		9.4		52.2	40.0	
9.3		18.1	27.1		9.3		4.5	49.7	B	9.4	59	1.0	25.2		8.5	10	55.0	26.0	K*b*	8.9		54.4	40.0	B
9.5		23.0	1.0		9.3		16.0	25.7		9.2		8.9	20.7		9.4		57.1	42.4		9.4		57.1	7.9	
9.5		30.6	22.3		9.3		17.8	53.0		8.6		22.3	28.4	L	9.5	11	1.0	6.5		9.4		59.1	43.0	
9.3		35.1	34.8		9.4		27.0	55.6		8.3		49.8	48.1	L	9.5		11.6	12.9		9.2	19	4.2	24.2	K
9.5		35.8	46.4		8.8		48.0	10.5		9.5		50.3	39.1		9.5		11.6	20.8		9.5		12.0	37.4	
9.5	35	14.0	20.0		8.3	46	0.0	51.8	K	9.5		56.5	20.0		9.5		35.0	55.2		9.5		28.2	30.6	K
9.0		18.8	36.2		9.0		10.7	0.5		9.3		58.2	40.2		9.3		35.9	18.2		9.4		35.0	36.5	
7.6		31.7	50.6	K	9.3		54.5	27.6		9.0	0	20.7	3.9	K	9.3		53.9	13.3		9.5		38.3	98.0	
9.5		52.9	4.6		9.3	47	0.2	37.0		8.8		26.3	57.0		8.9		55.5	58.1		9.5		40.0	34.6	
8.8	36	27.0	43.5		9.0		7.9	53.1		9.4		30.1	26.5	B	9.5	12	8.0	13.3		9.5		40.3	9.3	
9.5		51.9	44.6	B	6.2		24.3	13.7	K	9.5		36.9	25.0		9.0		11.6	41.5	K	9.5		44.2	0.9	
6.8	37	16.1	18.0	K*b*	9.5		31.1	5.4		9.3		38.7	1.0		9.4		21.2	43.8	*a*	9.5		44.4	40.4	
9.3		25.7	47.9	B	9.3		35.0	33.3	B	9.5		41.4	12.8		9.5		40.3	41.3	*a*	9.4		52.9	54.0	
9.5		29.6	20.2		9.4		35.0	34.8		9.2		41.9	57.4	*a*	9.1		58.0	49.6	K	9.2	20	4.0	7.8	
9.3		44.9	45.8		8.8		46.5	44.1		9.0		58.0	33.4	K	9.4	13	13.1	55.2	B	8.6		6.0	34.1	K
9.2	38	23.6	6.3		8.8	48	4.2	59.4		8.3		59.1	44.9	K	9.2		13.9	26.7	K	8.5		7.2	58.6	
9.5		34.6	14.7		9.0		9.7	12.1	K	8.8	1	15.3	56.0	K	8.8		23.4	52.2	K	9.5		15.0	18.2	
9.5		40.6	26.4		9.3		9.8	23.6		9.5		16.8	4.5		9.5		39.6	53.5		9.5		17.7	30.5	
9.5		47.5	40.9		8.8		18.8	54.9		9.5		55.8	56.4		9.5		51.7	40.0		9.5		22.7	32.1	
9.2		47.8	57.6	K	9.0		27.6	32.5		9.5	2	15.7	31.7		9.5		54.8	59.9		8.7		24.0	59.0	K
9.1		54.7	36.6	B	8.5		56.8	2.3	K	9.5		18.0	48.2		9.5		58.4	0.8		9.5		30.1	42.5	
9.5	39	18.9	16.1		9.0	49	12.8	50.8		9.5		31.5	50.2		9.5	14	22.0	3.3		9.5		39.8	5.3	
8.7		27.2	21.1	K*b*	8.5		54.5	45.7	K	9.5		39.0	10.9		9.4		48.0	25.3		9.0		42.9	39.6	K
9.5		33.3	2.0		8.3	50	39.8	38.2	K*b*	9.5		42.4	7.9		9.1		48.5	5.9	*a*	9.5		58.9	13.4	
9.0		34.3	49.1		9.5		43.6	5.7		9.2		51.9	4.4		9.5		50.4	28.4		9.5	21	7.3	38.4	
9.4		34.8	5.9	B	7.8		52.6	13.5	K	9.2		52.7	56.6		9.3		52.3	55.5	*a*	9.1		34.4	11.5	
9.2		40.7	18.2	K	9.5	51	37.8	22.5		9.5		56.6	39.0		9.4		56.8	2.2		8.9		47.5	5.3	
9.3	40	3.4	51.9	B	9.4		52.9	57.1		9.5	3	2.4	13.7		9.5	15	7.6	8.8	B	9.5	22	3.0	41.6	
9.5		5.3	52.0		9.5		56.8	50.1	*a*	8.9		10.0	36.6		9.2		17.8	29.8		9.0		19.5	3.8	
9.0		10.0	17.4	K	9.5	52	18.6	18.1		9.5		13.0	22.0		9.0		20.3	4.8		9.5		34.0	59.4	
9.5		16.7	53.3		9.4		23.8	17.3	B	9.5		47.4	17.5		8.9		34.7	17.9		9.5		38.6	34.1	
9.3		36.5	36.8		9.5		27.9	18.7		7.8	4	13.3	20.1	K	9.3		35.3	46.4		9.5		58.7	29.6	
8.0		39.5	25.6	K	9.1		28.3	57.3	K	6.5		17.2	50.8	K	7.9		37.1	55.0	S*b*	9.2	23	3.2	40.1	
9.5		50.8	27.0		9.0		53.7	48.1	K	9.5		28.0	35.7		8.6		40.5	59.4		9.5		6.8	31.8	
8.8	41	1.0	31.9		9.2	53	15.8	16.6		9.5		33.3	27.0		9.5		46.6	45.8		9.3		7.9	3.7	B
8.7		5.7	33.2	K	8.9		16.0	11.5		8.8		38.9	25.8	K	9.5		47.3	5.9		8.1		8.9	14.7	K
9.3		11.3	29.1		9.3		32.2	40.0	*a*	9.5		45.9	11.1	*a*	9.4		50.4	56.0		9.5		18.0	14.8	
9.3		16.1	19.5		8.8		40.8	34.9	K	9.2		46.1	42.0		9.0	16	1.0	31.0		9.5		21.0	40.7	
10 pr.		*30.33*	*1.20*		*10 pr.*		*30.83*	*1.05*		*10 pr.*		*30.83*	*0.86*		*10 pr.*		*30.83*	*0.70*		*10 pr.*		*30.83*	*0.58*	

m	5ʰ	+0°	
	● 1101—1160		
9.1	23′ 32.7	17.9	
9.5	36.7	34.9	
9.5	37.0	24.6	
9.3	24 20.6	8.9	
9.3	43.0	55.6	
9.5	43.0	48.0	
9.4	45.5	41.1	
8.9	25 1.7	58.3	
9.5	1.8	23.6	
9.3	17.9	21.9	
9.4	42.2	45.7	
9.5	48.6	9.0	
8.6	59.3	31.0	K
9.4	26 25.3	56.0	
9.5	27.0	14.5	
9.5	32.7	19.4	
9.5	44.0	45.6	
9.5	44.0	18.8	
9.5	27 7.3	38.9	
9.5	23.7	33.1	
9.5	25.4	4.5	
9.5	27.9	52.0	
9.2	29.5	0.0	αB
9.5	49.9	53.3	
9.5	52.0	17.7	
9.5	54.4	9.0	
9.5	59.0	27.7	α
8.8	28 4.0	24.1	K
9.1	15.9	38.3	K
9.4	47.1	56.1	
9.0	29 18.9	12.1	K
9.3	25.4	32.9	
9.3	33.3	0.3	
9.5	35.0	18.2	
9.5	36.5	24.1	
9.5	48.0	36.0	
9.5	30 12.5	55.0	
7.9	23.2	52.7	L
8.8	24.8	13.3	
9.0	27.3	54.2	L
9.5	32.5	24.6	
9.5	35.3	34.6	
9.5	31 0.9	31.6	
9.5	35.0	18.2	
7.8	32 11.0	44.4	K
9.0	14.5	50.1	K
9.5	16.7	30.8	
9.5	26.0	37.4	
9.5	46.5	59.7	
9.0	47.3	53.8	K
9.5	33 27.9	56.9	
7.3	38.7	15.5	K
9.5	45.0	35.1	
9.5	56.6	53.4	
9.5	34 10.5	44.4	
9.5	43.4	5.7	
9.5	35 15.8	7.3	
9.3	28.8	27.7	
9.5	33.5	20.5	
9.2	34.7	6.3	
10 pr.	+ 30.83	+ 0.43	

m	5ʰ	+0°	
	1161—1220		
9.6	35′ 45.6	7.3	
9.5	53.5	49.0	
8.7	59.9	6.7	K
9.5	36 7.7	31.4	
8.8	11.0	40.9	B
9.2	20.8	59.1	Kb
9.5	34.5	12.2	
9.0	43.1	53.7	K
9.5	48.0	38.0	
9.2	52.4	4.6	B
9.1	57.6	1.1	
9.4	37 3.2	25.7	B
9.5	10.5	47.3	
8.9	26.6	30.7	K
9.5	43.1	53.0	
9.5	39 6.6	33.1	
neb	20.2	0.9	
8.8	27.3	54.5	Kb
9.5	30.0	16.6	
9.5	37.6	34.8	
9.5	41.0	14.4	
9.5	41 15.3	20.2	
9.2	17.0	36.9	
7.5	19.7	40.9	K
9.4	47.2	8.9	
9.5	42 26.6	9.3	
8.3	32.6	6.5	K
9.5	42.0	54.5	
9.5	43 0.0	19.6	
9.4	22.8	32.9	
9.4	23.4	53.9	
9.5	28.1	58.1	
9.0	29.0	17.8	K
9.5	46.2	18.9	
9.5	44 1.5	35.7	
9.5	35.2	43.3	
9.5	45 0.0	43.4	
9.5	1.0	31.6	
9.3	13.9	54.6	
9.5	28.7	7.7	
9.5	38.1	45.2	
9.5	45.0	46.1	
9.0	46 0.2	44.6	K
9.5	4.5	25.5	
9.3	27.0	57.4	
9.4	27.3	36.1	
9.5	47 13.0	5.3	
7.0	15.6	56.4	K
9.5	18.2	50.5	
9.5	25.6	40.3	
8.9	30.2	32.7	K
9.5	45.1	57.4	
9.2	51.2	49.9	
9.5	52.5	6.6	
9.5	54.5	14.9	
9.3	48 1.5	41.8	
9.5	3.7	51.9	
7.9	29.2	48.2	K
9.5	34.0	44.0	
9.5	36.5	51.3	
10 pr.	+ 30.84	+ 0.24	

m	5ʰ	+0°	
	1221—1280		
9.2	48′ 50.5	7.7	
9.5	51.5	14.4	
9.5	57.2	11.0	
9.5	58.3	44.9	
9.4	49 17.1	59.5	
9.3	33.0	24.9	
8.1	58.4	0.4	K
9.0	50 0.6	11.6	
9.2	1.0	21.7	α
9.0	1.9	22.7	
9.4	10.2	12.4	
9.4	12.8	52.3	B
9.5	28.5	33.5	
9.3	34.0	48.7	
9.5	41.0	17.6	
9.5	48.3	0.3	
9.5	59.0	3.2	
9.5	51 6.0	5.3	
5.7	23.0	31.7	K
9.5	56.5	31.4	
9.5	52 19.5	9.9	
8.6	25.7	2.0	
9.5	29.5	42.0	
9.5	58.0	0.0	
9.5	53 6.0	0.5	
9.5	21.0	12.4	
9.5	22.1	56.5	
9.5	24.0	31.7	
9.5	44.0	15.1	
9.5	55.0	44.4	
9.5	54 2.7	17.5	
9.5	7.5	47.8	
9.5	13.0	19.4	
9.5	29.0	33.9	
9.1	45.1	58.2	αB
9.5	52.8	40.5	
9.5	55 3.6	14.9	
9.4	20.5	43.5	B
9.5	31.5	52.2	
9.1	41.8	25.7	
9.5	55.5	54.3	
9.5	56 15.0	42.1	
9.5	32.6	36.0	
8.7	48.7	37.3	
9.4	57 11.2	57.4	B
9.5	28.0	20.1	
9.2	36.9	39.2	B
9.5	37.5	53.5	
7.7	40.6	52.2	K
7.0	54.7	37.1	K
9.5	58 19.6	23.0	
9.0	20.2	28.5	
9.5	27.3	30.4	
9.2	35.5	28.4	α
9.5	41.0	3.4	
9.5	49.1	23.0	B
9.5	50.8	17.3	B
8.9	52.7	1.3	
9.2	53.9	52.9	
9.5	59 0.7	27.7	
10 pr.	+ 30.84	+ 0.09	

m	5ʰ — 6ʰ	+0°		
	1281—1340			
9.5	59′ 7.0	15.9		
9.5	13.0	31.2		
9.5	22.5	58.7		
9.5	29.2	55.3		
7.8	32.5	5.9	Kb	
9.0	34.8	49.8	B	
9.2	37.2	24.0		
8.9	38.1	46.3		
9.1	42.6	20.0	S	
9.3	44.7	29.0		
9.3	50.2	31.4		
9.5	0 15.2	24.8		
9.5	18.0	0.7		
9.4	23.6	21.0		
9.3	38.4	54.8	B	
9.5	1 6.0	49.5		
9.5	26.7	48.0		
9.5	27.7	4.5		
8.9	29.2	9.6		
9.5	40.7	42.0		
9.5	2 30.0	12.7		
9.0	41.3	43.3		
9.5	48.6	42.8		
9.5	50.9	18.3		
9.5	3 13.0	8.2		
9.4	14.3	26.7		
8.7	17.7	11.6		
9.5	20.6	59.9		
9.5	21.0	35.9		
9.4	24.1	42.8		
9.5	45.2	58.0		
9.5	55.2	59.6		
9.5	57.5	8.2		
9.5	4 7.5	6.1		
9.5	19.6	13.8		
9.5	23.3	52.5		
8.5	24.9	46.7	L	
9.5	51.7	56.2		
9.5	58.1	55.6		
9.5	5 6.3	52.1		
9.5	23.9	19.4		
9.5	26.9	2.3		
9.5	28.0	5.1		
8.6	30.8	47.6	K	
9.5	32.7	40.9		
9.4	43.8	43.6		
8.5	46.3	11.7		
8.5	47.5	37.1	K	
9.3	49.5	43.2		
9.5	55.0	28.9	B	
9.5	58.0	28.1		
9.5	58.1	6.6		
9.5	58.8	1.6		
9.5	6 9.0	32.5		
9.5	18.7	59.9		
9.5	43.0	42.3		
9.5	45.0	3.6		
8.8	57.5	53.8		
9.5	58.9	42.0		
9.2	7 4.0	45.1	α	
10 pr.	+ 30.84	— 0.05		

m	6ʰ	+0°	
	1341—1400		
9.2	7′ 4.6	40.5	α
9.2	5.5	37.5	α
9.5	16.7	40.2	
9.4	21.0	37.5	
9.5	24.0	47.5	
9.5	31.1	24.6	
9.5	45.0	8.6	
9.3	58.9	48.6	
7.8	8 5.0	52.4	
8.9	15.0	1.0	
9.4	32.6	11.7	
8.4	37.0	55.1	
9.0	48.3	46.0	
7.8	49.5	3.4	K
9.1	9 0.6	37.2	B
9.5	11.7	36.7	
9.5	13.6	1.6	
9.4	18.0	31.8	
9.5	27.3	6.2	
9.0	38.4	16.5	B
9.0	38.9	57.2	
9.5	47.2	45.8	
9.4	48.7	30.8	
9.4	58.9	38.6	
9.5	59.2	17.2	
9.4	10 4.9	41.3	
9.5	9.4	52.1	
9.2	14.4	19.8	
9.4	17.0	35.6	
8.0	32.9	16.7	K
9.3	36.6	6.4	
8.5	38.7	31.1	K
9.3	39.1	39.4	
9.3	48.5	8.6	B
9.5	11 5.0	14.7	
9.5	19.6	13.8	B
9.5	41.6	38.2	
9.3	52.8	7.0	
9.2	54.2	20.9	
9.5	12 0.5	14.0	
9.5	5.6	14.8	
9.2	25.4	37.6	
9.5	25.5	1.9	
9.5	39.2	37.4	
9.3	46.9	38.5	
9.5	56.5	56.6	
9.5	13 4.2	53.0	B
9.5	9.3	11.1	
9.1	20.0	54.6	
8.5	21.5	48.0	L
9.5	29.0	34.3	
8.5	33.0	18.2	
9.5	39.3	4.5	
9.5	14 17.6	28.4	
8.6	28.2	22.3	
9.0	48.2	5.2	
9.0	15 14.6	10.0	
9.2	44.9	59.8	
9.0	45.6	17.8	
8.5	49.4	56.9	K
10 pr.	+ 30.84	— 0.15	

16.3/ see Bond Observations in the H.A. I, Part II. 183. 8 Jan 177

1401—1460

	6ª		+c°	
m		″	′	
9.5	15	59.6	51.6	
9.1	16	17.4	3.3	K
8.6		29.3	3.0	K
9.5		29.3	33.2	
9.0		37.2	22.9	
9.2		40.7	1.4	
8.8	17	12.5	58.2	
9.5		13.2	1.1	
9.0		21.8	13.1	
8.9		34.1	27.7	
9.1		34.6	4.5	
9.0		40.4	44.1	
9.5		41.9	27.8	
7.5	18	23.5	53.3	K
9.4		37.6	6.7	
9.5		59.0	44.8	
9.3	19	14.5	51.2	B
8.0		16.9	32.0	K
9.0		19.7	31.1	K
9.0		24.0	54.1	K
7.6		31.0	55.0	K
9.3		32.4	47.4	B
9.3		35.1	4.3	
9.3		40.6	53.7	B
8.2		44.0	13.1	K
5.9		46.7	22.9	K
9.5		49.0	25.1	
9.3		49.5	38.8	B
9.5	20	5.2	52.0	B
9.5		13.3	21.2	
9.2		26.5	38.1	
9.3		26.7	33.3	B
9.5		44.3	39.1	
9.3		59.9	38.1	
9.5	21	10.8	47.4	
9.5		12.6	46.0	
7.9		27.7	13.1	P
9.3		34.7	47.4	
9.3		44.9	39.0	
9.3		46.4	48.5	
9.5		50.0	28.2	
8.9	22	0.8	17.3	
8.5		33.7	25.8	K
9.4		38.4	48.6	
9.0		39.9	51.9	
9.4		42.0	58.3	B
9.2		44.2	38.8	*b*
9.5		45.4	31.3	
8.5		53.8	3.8	K
9.3		59.0	3.0	
9.4	23	5.0	9.3	
9.5		16.9	26.6	
9.5		18.2	50.6	
9.5		23.6	48.5	
9.5		27.0	55.7	
9.5		30.3	59.3	
9.2		40.2	44.9	
9.5		47.3	54.4	
9.3		53.9	40.1	
9.0	24	6.8	54.7	
10 pr.		+ *30.84*	− *0.29*	

1461—1520

	6ª		+c°	
m		″	′	
9.5	24	17.2	44.2	
9.2		25.2	44.5	
9.5		39.3	34.9	
9.0		41.0	22.7	
9.3		49.9	51.6	
9.5		53.6	34.1	
9.5	25	13.9	50.8	
9.4		15.0	7.6	
8.7		16.2	32.1	K
9.5		24.0	10.6	
9.5		41.6	38.3	
9.3		50.4	47.5	
9.3	26	5.2	21.8	
8.9		9.6	4.4	K
9.4		11.2	48.1	
8.7		14.7	44.2	
9.5		29.7	14.0	
9.5		41.0	18.5	
9.2		41.3	58.5	
9.4		50.9	48.1	
9.5	27	0.5	35.9	B
9.5		2.9	59.7	
9.5		4.3	32.0	
9.3		5.5	18.3	
9.4		27.2	33.6	B
9.2		27.4	7.9	
9.3		27.7	18.6	
9.3		28.7	38.4	B
8.5		31.2	36.6	K*b*
9.3		40.8	57.1	B
6.6		48.3	59.9	K
9.5		52.2	47.1	*B*
9.4	28	0.7	55.6	
8.6		2.9	36.8	K
9.5		16.7	28.1	
9.5		16.9	16.4	
9.3		23.9	55.6	
9.5		35.0	51.4	B
9.1		36.4	4.9	
9.3		48.7	31.9	
9.4		57.0	9.0	
9.5		58.4	38.0	
9.5	29	2.0	23.4	
8.7		12.7	39.2	K
9.0		25.5	5.0	
9.2		34.8	22.7	
9.4		39.7	55.5	B
9.5		48.0	45.9	
9.5	30	3.5	31.9	
9.5		15.5	23.0	
9.4		18.9	52.0	
7.7		22.5	38.2	K
9.5		23.6	32.9	
9.5		28.7	4.0	
9.2		46.8	13.0	K
9.2	31	0.3	49.7	
8.6		0.5	56.4	
9.3		6.6	47.3	
8.5		18.5	22.5	K
8.8		28.2	16.3	K
10 pr.		+ *30.84*	− *0.40*	

1521—1580

	6ª		+c°	
m		″	′	
8.8	31	30.8	8.3	
9.4		34.5	30.1	B
8.0		43.4	31.4	K
9.4		43.5	37.2	B
8.5		54.7	14.1	L
9.0	32	3.5	39.4	
8.5		4.3	42.3	K
9.1		8.3	46.3	
9.2		20.8	10.4	
9.3		22.3	29.5	
9.5		27.1	46.3	
9.0		37.4	45.4	K
9.2		38.6	36.2	
9.5		50.0	15.4	
9.5		54.1	33.0	
9.5	33	0.0	48.8	
9.5		3.5	45.2	
9.5		5.5	1.8	*a*B
9.4		9.8	50.3	B
9.5		12.6	52.2	
9.5		15.6	52.5	
8.7		25.2	16.1	B
9.4		29.5	14.9	
9.3		33.6	16.9	
9.2		34.2	39.4	B
6.5		38.4	37.0	K
9.5	34	4.5	12.8	
9.0		29.3	24.8	K
9.4		37.2	13.1	
9.2		38.3	20.4	B
9.5		47.0	7.6	
9.5	35	5.1	48.0	
9.0		12.6	37.8	
9.5		35.3	40.5	
8.8		40.8	11.5	K*b*
8.0		48.3	7.0	K
9.3		52.0	9.8	B
8.5		55.1	24.9	
9.5		59.1	51.3	
9.5	36	0.4	55.2	
9.5		12.8	36.4	
9.5		16.0	56.5	
9.5		21.5	26.8	
9.5		22.0	42.9	
9.4		34.9	32.1	
9.5		36.9	19.2	
9.2		44.3	44.9	K
9.5		45.2	12.6	
9.5		51.0	52.4	
9.3	37	0.5	13.6	
8.6		2.8	3.0	
8.7		5.3	17.1	
8.7		8.8	24.7	
8.0		9.4	44.1	K
9.3		14.7	56.5	B
9.2		25.3	45.3	K
9.5		28.6	30.0	
9.2		39.8	4.1	K
9.5		42.5	31.0	
7.8		46.4	6.2	K
10 pr.		+ *30.83*	− *0.50*	

1581—1640

	6ª		+c°	
m		″	′	
9.5	37	47.3	56.0	
9.4	38	11.9	17.6	
9.4		13.0	13.4	B
9.4		14.7	20.7	
9.5		16.4	28.8	
9.5		38.9	50.0	
8.3		44.3	53.6	B
9.5		48.3	39.3	
8.9		51.2	15.3	
9.4		58.1	28.5	B
9.5	39	1.1	46.1	
9.0		2.0	15.5	
9.5		9.5	32.8	
9.5		26.9	2.3	
9.5		37.1	51.5	
9.5		43.3	12.4	
9.5		47.2	33.9	
9.2		56.9	51.0	*a*
9.5	40	0.0	12.8	
8.8		1.8	50.6	K
9.5		9.9	40.4	
9.5		14.4	37.8	
9.3		17.7	38.3	B
7.6		20.9	29.6	K
8.6		24.6	24.0	
9.5		24.7	12.0	
9.0		27.9	56.1	K
8.7		32.8	28.4	K
9.1		34.5	37.2	B
8.2		46.2	26.8	K
9.5		55.1	42.8	B
9.2	41	5.2	45.1	
9.5		9.2	10.6	
9.2		15.1	42.6	B
9.3		21.7	3.9	B
8.8		21.7	1.2	
9.5		22.3	32.3	
9.5		24.5	24.8	B
9.2		38.0	4.6	
9.5		38.7	37.2	
9.2		39.7	46.7	
9.5		40.0	12.9	
9.3		41.8	43.2	
9.1		41.9	14.9	B
9.5		45.1	30.4	
9.4		51.3	20.3	
9.2		55.9	53.6	*a*B
9.5	42	5.1	48.5	
9.0		9.8	54.0	B
9.2		11.4	46.6	
9.3		11.9	10.6	
9.5		20.0	16.5	B
9.3		25.9	53.2	
9.5		29.5	23.9	
8.7		35.8	54.8	K*b*
9.4		37.6	59.0	
8.5		47.2	17.6	K
9.5		50.6	36.7	
9.5		53.0	34.6	
9.2		55.7	18.9	
10 pr.		+ *30.83*	− *0.59*	

1641—1700

	6ª		+c°	
m		″	′	
9.5	43	8.5	36.5	
9.3		17.8	1.0	
9.5		25.0	15.3	
9.5		27.9	5.4	
9.4		32.8	18.8	
9.4		41.5	13.4	
9.5		48.3	12.6	
9.4		54.4	6.6	
9.5	44	0.3	19.8	
8.9		4.0	8.2	
8.5		6.7	28.2	*B*
9.3		8.8	13.1	
8.8		9.9	35.1	
9.2		13.9	29.8	
8.5		14.0	32.2	B
8.8		14.9	58.4	
9.5		15.0	56.4	
9.0		17.0	40.2	
9.0		18.3	38.8	
8.5		18.3	38.5	
9.5		21.5	45.0	
9.1		24.6	50.3	
9.5		44.1	34.6	
9.5		44.5	37.5	
9.0		49.6	37.5	
9.5		51.5	4.7	
9.3		59.4	27.6	
9.4	45	1.0	11.3	B
9.4		3.1	10.6	*B*
9.5		9.3	30.6	
9.5		12.3	42.3	
9.5		16.1	38.1	
9.3		26.0	57.6	
9.5		32.7	46.9	
9.2		38.1	22.0	K
9.4		40.6	1.6	
9.4		41.1	43.3	
9.5		43.1	54.1	
9.5		50.6	55.1	
9.5		53.9	34.6	
9.2	46	2.3	27.7	
9.5		4.6	1.7	
9.3		13.6	27.8	
9.5		16.9	38.8	
8.5		20.0	54.1	K
9.2		20.6	3.6	
9.0		32.3	44.6	K
9.0		35.1	51.1	K
9.4		38.3	57.9	
9.5		43.2	2.0	
8.6		56.6	20.8	
9.4	47	6.1	28.2	
9.3		13.0	45.0	
9.5		15.3	7.7	
9.5		18.9	39.9	
9.5		22.5	25.0	
9.4		27.1	46.3	
9.3		27.9	59.1	*a*
9.5		33.7	57.4	
9.5		41.9	31.4	
10 pr.		+ *30.83*	− *0.66*	

9.7	22	44.0	54.5	B

1701 – 1760					1761 – 1820					1821 – 1880					1881 – 1940					1941 – 2000				
	6ᵐ		+0°			6ᵐ – 7ᵐ		+0°			7ᵐ		+0°			7ᵐ		+0°			7ᵐ		+0°	
m		″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	47	48.5	23.8		9.4	53	38.7	43.2		8.8	1	25.7	14.1	B	8.5	9	33.9	47.5	K	9.5	18	59.9	7.4	
9.5		48.7	59.1		9.5	54	1.7	5.2		9.2		33.0	26.3	B	9.5		35.2	11.6		9.2	19	9.2	32.0	K
9.5		55.4	56.2		9.4		10.7	18.2	D	9.2		36.0	15.9	α	8.5		52.9	54.5	K	9.3		24.5	54.7	
9.5		55.5	2.2		9.3		11.2	18.4	B	9.5		47.4	57.0		9.5		55.4	39.7		8.5		33.4	31.1	K
8.7		59.8	31.7	K	9.4		15.4	27.4		9.4		48.9	23.6		*8.3	10	9.9	26.7		9.4		36.8	48.6	B
9.5	48	4.7	37.4		8.9		21.7	6.1	K	9.3		54.9	28.0		9.4		10.1	22.4	B	9.1		39.3	24.5	B
9.5		9.7	50.4		9.3		40.2	9.1		9.3	2	10.9	35.2		8.3		14.7	10.6	K	8.8		55.5	7.5	K
9.2		12.8	33.7	K	8.8		50.8	38.8		9.5		21.9	9.5		9.0		16.4	23.5		9.5		52.2	39.8	
9.5		15.6	48.7		9.3		58.6	42.0	α	9.0		31.5	57.6		9.5		28.9	57.2		9.4		52.5	33.6	B
9.5		24.0	2.8		9.5	55	15.9	24.5		9.5		46.9	33.8		9.5		38.9	24.7		9.3	20	0.7	47.8	
9.5		44.4	2.8		9.5		19.5	59.0		9.5		54.9	48.5		8.8		45.9	4.9	K	9.0		8.6	39.3	
9.5		46.5	29.3		9.5		22.1	54.6		8.5		55.9	29.6		8.0	11	9.0	32.5	K	8.9		44.7	52.8	
9.0		53.3	58.0		9.5		25.0	44.9		8.4	3	5.6	4.5	L	9.3		10.9	26.9		8.5		46.1	44.2	L
9.4		55.9	25.2		9.5		35.0	0.5		9.5		16.4	28.7		9.2		11.3	18.2	K	9.1		48.0	52.1	αB
9.5		57.9	47.2		9.3		49.4	43.1		9.3		16.9	46.7		9.5		15.3	5.4		9.5	21	10.0	29.5	
9.3	49	6.9	30.2		8.2		57.4	33.2	K	9.2		19.3	6.7	K	9.1		28.9	56.1		9.4		18.9	6.4	
8.0		8.6	17.5	L	9.5	56	5.0	53.8		9.4		28.9	53.1	B	7.8		30.4	20.5	K	9.5		21.0	15.1	
8.7		16.3	35.5	K	9.2		15.0	18.1	K	9.2		30.5	28.6	B	9.3		38.9	43.9		9.5		29.3	2.6	
8.0		19.2	59.3	B	9.5		18.1	27.6		9.2		34.6	30.0	B	9.5		58.0	16.6		9.3		48.9	38.7	
9.3		23.4	0.5		9.2		22.7	20.6	K	9.5		34.7	10.0		8.5		59.9	21.4	K	9.5	22	6.0	13.3	B
9.4		25.1	41.2		9.0		23.2	54.5		9.5		37.0	17.5		9.4	12	28.3	26.3	B	8.5		19.7	51.2	K
9.5		29.0	55.0		9.5		29.0	9.1		9.2		43.9	32.9		9.2		36.3	11.6	K	9.5		34.1	24.7	
9.5		30.6	57.4		9.0		42.3	14.2	K	9.3	4	4.1	0.1		9.0		43.0	13.5	K	9.5		34.6	35.3	
8.7		38.9	44.7	K	9.3		57.9	19.2		9.5		17.2	30.3		9.3		46.0	19.2	B	9.5		41.7	25.3	
9.3		41.9	51.4		9.5	57	9.8	2.2		9.5		42.0	20.1		9.5		48.0	1.6		9.4		51.2	12.5	B
9.1		54.2	59.9	K	9.5		15.9	53.7		9.5		45.9	51.9		9.0		59.6	23.1	K	9.5	23	8.9	6.4	
9.3		57.7	38.9		9.3		17.3	45.9		9.1		46.1	34.4	B	9.0	13	1.6	25.1	B	9.5		19.4	45.7	
9.0	50	2.3	3.4		9.5		31.8	6.8		8.5		52.9	42.2	L	9.5		3.9	7.9		9.1		23.6	48.2	B
9.3		7.5	52.9		9.5		33.1	57.9		8.6	5	4.9	49.2	K	7.5		4.0	39.9	K	9.0		27.1	56.9	B
9.3		9.1	28.6		9.5		35.9	39.3		9.2		16.9	46.1		9.0		17.2	36.6	K	9.5		28.2	13.3	
9.3		10.5	33.9		8.2		41.5	32.6	K	9.3		20.1	52.8		9.5		27.3	44.2		8.0		30.9	27.4	Kb
9.5		10.5	56.4		9.3	58	1.5	5.3		8.7		25.9	57.2	K	9.5		39.7	5.1		9.0		32.0	21.7	B
9.5		12.8	38.2		9.5		3.5	58.8		9.3		41.9	32.5		9.0		42.8	16.8		8.6		41.5	27.8	K
9.2		22.9	29.2	K	9.2		11.6	29.2	K	8.5		43.9	28.0		9.5		55.5	11.3		9.3		44.6	59.4	
9.5		23.5	53.0		9.5		17.3	26.0		9.2		53.9	47.5		7.0	14	36.5	27.4	K	8.9		47.5	3.1	K
9.0		26.8	13.7		9.1		23.2	12.6	K	9.5	6	5.0	59.7		7.0		59.3	58.5	K	9.2		54.7	23.9	
8.2		37.7	33.7	K	9.5		36.7	29.1		9.0		25.3	6.1	K	9.4		59.3	24.4	B	8.2	24	25.2	45.8	K
9.5		52.4	40.0		9.0		48.4	31.2	K	9.3		29.4	18.9		7.6	15	6.6	0.8	K	9.2		28.7	40.3	Kb
8.8		58.7	10.5	K	9.2		50.0	42.5		9.2		36.9	18.3		9.5		15.5	13.2		8.5	25	1.7	47.8	K
8.8	51	7.9	17.1	K	9.2		54.9	1.9	K	9.0	7	2.3	59.2		8.7		44.1	3.8	K	9.0		19.2	0.6	
9.5		32.1	55.7		9.5	59	9.4	27.7		9.2		5.9	33.0	K	7.9		54.8	49.7	K	9.4		28.8	33.3	
9.5		34.6	6.2	K	9.4		9.5	24.4		9.5		6.4	11.5	B	9.5	16	2.8	59.8		8.8		29.5	57.6	K
9.3	52	17.3	48.2	B	9.1		18.8	17.4	K	9.2		7.9	50.3		9.3		6.5	28.5		9.4		31.0	30.3	
8.7		20.2	29.4		9.4		20.4	36.3	K	9.5		12.9	36.7		9.1		7.5	29.2	B	9.4		31.0	23.0	
9.5		23.5	47.6		9.5		34.0	59.8		9.5		20.9	50.3		9.3		9.5	39.0		9.2		33.6	26.5	B
9.5		28.3	34.2	B	9.5		48.9	2.5		8.8		24.4	28.3	K	9.1		16.5	33.1		9.3		33.7	30.8	
9.2		31.1	9.1	K	9.5	0	3.5	59.5		9.5		27.9	51.4		9.5		16.5	29.7		8.8		36.7	36.6	
9.5		36.3	7.2		9.5		24.9	57.0		9.0		49.3	11.9		9.2		18.7	39.8	B	9.5		45.8	18.5	
9.3		37.3	15.3	K	9.1		34.9	14.0	B	8.3		51.9	52.5	K	8.8		19.7	17.3		8.5		47.4	28.6	
8.3		48.0	16.6	K	8.8		35.3	5.1	B	9.0		53.9	27.4	B	9.5		30.1	0.8		9.0	26	0.6	55.1	K
9.5		56.5	16.5		9.4		40.3	12.2	B	7.2		54.1	5.7	Pb	9.5		45.4	54.7		9.0		0.9	33.4	
9.2	53	2.4	5.4		9.4		43.1	9.2		9.5		56.9	28.3		9.0		53.0	3.8	K	9.5		13.6	24.7	
9.4		5.5	28.0	B	8.6		50.9	38.9		9.0	8	7.0	43.4	B	9.0		58.1	52.4		9.0		20.1	19.5	
9.1		5.6	18.3	Kb	9.4		54.8	17.1	B	9.2		34.3	13.7	B	9.2	17	18.3	40.1	K	9.5		33.7	55.9	
9.5		21.3	50.8		8.8		58.9	43.6		9.5		41.4	12.9	D	8.9		57.7	45.4	B	9.5		37.7	19.2	
9.5		35.1	38.9		8.3	1	6.9	41.1	L	9.5		51.0	5.4		9.0	18	5.8	31.1	K	9.3	27	6.0	31.4	B
9.0		36.1	52.0		9.0		7.9	7.0	K	9.3	9	3.9	35.5		9.3		12.0	18.2	B	8.1		11.2	29.4	K
8.3		43.6	45.4	L	9.5		17.8	4.6		9.5		16.9	1.9		9.5		12.0	14.8		8.7		24.2	27.4	K
9.5		47.7	29.0		9.5		18.4	31.9		9.2		17.9	57.2		9.5		19.6	2.8		9.4		46.3	9.5	K
8.5		49.7	12.9	K	9.0		18.9	39.4		9.2		31.9	27.5		8.7		33.2	36.6	K	8.7		49.2	50.1	L
		+	—				+	—				+	—				+	—				+	—	
10pr.		30.83	0.73		10pr.		30.83	0.84		10pr.		30.83	0.94		10pr.		30.83	1.05		10pr.		30.83	1.19	

1884ᵃ				
9.5	10	5.1	9.0	B

2001 — 2060

m	7ᵘ		+0°	
	′	″	′	
9.5	27	56.2	50.5	*a*
9.3		59.4	34.6	
9.2		59.6	35.1	B
9.3	28	7.6	33.1	
9.3		13.6	56.2	
9.2		14.2	33.8	B
9.2		22.7	59.6	
9.5		29.2	48.8	
8.9		42.2	14.8	
9.5		44.7	51.0	B
9.0		46.9	10.4	
9.4		47.0	24.9	
9.0		53.9	53.0	B
9.0		54.0	21.6	B
9.0		54.2	29.5	B
9.0		55.7	13.9	K
9.0	29	4.7	11.9	K
9.3		32.1	19.8	
9.5		37.6	10.1	
9.5		57.2	32.7	
9.4	30	13.8	15.2	
9.2		39.8	55.3	K
9.4		47.7	18.4	B
9.5		48.2	37.0	
9.3		57.8	14.4	
7.3	31	3.1	50.4	K
9.5		14.9	6.6	
9.5		23.7	18.9	
7.7		32.7	3.9	K
8.3		49.2	26.4	L
9.5		53.1	11.6	
9.5	32	11.7	40.2	
9.5		23.7	29.1	
9.5		26.5	15.8	
9.5		27.1	43.9	
9.5		35.6	39.6	
9.5		38.3	56.4	
9.3		55.7	31.4	
9.5		58.0	1.3	
9.2	33	23.7	13.7	
8.7		30.2	57.5	K
9.2		39.2	51.1	
9.2		43.5	26.4	B
9.4		47.2	30.0	
9.5	34	5.3	55.6	
9.5		39.7	39.9	
9.5		43.5	6.9	
9.5		48.1	16.8	
9.2		51.5	18.3	
*9.5	35	20.5	12.5	
9.0		22.5	13.9	K
9.5		35.2	10.6	
9.5		35.9	57.0	
6.5		39.3	32.3	Kb
9.5		48.4	16.5	B
9.0		48.8	18.1	K
9.2		49.2	37.4	B
9.5	36	17.9	15.9	
9.3		18.5	2.5	
9.2		20.6	33.1	
10pr.		+ *30.83*	— *1.30*	

2061 — 2120

m	7ᵘ		+0°	
	′	″	′	
8.8	37	1.7	28.7	Kb
9.3		10.7	18.9	
9.5		27.7	54.5	
9.3		31.5	12.7	
9.5		37.7	12.8	B
9.2	38	30.2	27.1	B
9.1		41.5	33.3	B
9.3		51.1	56.7	
9.5		58.3	54.1	
9.3	39	8.0	48.5	B
*9.5		15.9	10.8	
*9.3		18.7	41.0	
9.5		19.5	12.9	
9.3		19.7	9.2	B
9.5		23.7	9.7	
9.4		24.1	23.9	
9.5		30.1	26.9	
9.5		31.0	22.4	
8.5		36.6	22.2	K
9.0		36.9	22.5	K
9.3		40.4	22.8	*a*
9.5		44.5	27.8	
9.5		51.8	16.0	
9.3		57.2	12.6	
9.2		59.9	6.1	
9.0	40	3.7	40.6	
9.4		17.3	51.9	B
9.5		23.7	10.7	
9.3		26.6	8.8	B
9.3		29.6	28.1	
8.9		30.6	49.5	K
9.5		40.2	48.5	
9.4		49.1	34.0	B
9.4		53.7	26.5	B
9.0	41	0.1	12.9	
9.5		3.6	48.5	
8.7		16.2	42.5	
8.3		18.2	5.3	K
9.3		22.2	38.3	
9.3		51.4	12.5	
9.5	42	11.5	11.4	
9.3		19.4	40.0	
9.5		20.7	8.6	
9.3		38.9	54.7	
9.5		39.7	0.7	
9.3	43	20.7	18.2	
9.3		21.7	12.2	
6.5		28.0	26.1	L
8.8		51.7	15.6	Kb
8.7	44	6.9	45.1	K
9.3		46.1	31.0	
9.0		49.6	29.1	K
9.5	45	0.4	11.4	
9.3		45.2	47.7	
8.8		49.7	13.2	K
8.9	46	5.7	9.9	B
9.3		10.2	30.1	
9.3		20.7	57.0	
8.3		25.4	42.2	L
9.3		26.3	59.5	
10pr.		+ *30.83*	— *1.42*	

2121 — 2180

m	7ᵘ		+0°	
	′	″	′	
9.0	46	43.4	15.8	K
9.3		59.8	10.3	
9.5	47	1.6	28.1	
9.5		4.9	38.0	
9.0		50.7	22.8	
9.0		56.7	30.3	
9.0		59.4	5.2	K
9.5	48	0.6	38.6	
9.0		27.2	5.8	K
9.3		38.7	24.1	
8.8		40.2	3.1	K
9.3		42.9	25.0	
8.5		[illegible]	55.2	Kb
9.0	49	[illegible]	30.4	K
9.3		7.7	22.5	
9.5		10.4	0.4	
9.3		16.2	1.3	
9.5		22.3	1.7	B
8.8		23.6	38.0	K
9.5		24.9	21.8	
9.5		45.4	50.7	
8.3	50	18.1	40.6	Kb
9.4		31.1	1.6	B
9.3	51	9.7	25.5	B
8.5		21.6	23.6	B
9.0		35.7	59.3	
9.2		58.9	20.2	K
9.5		59.7	52.5	
9.3	52	13.3	9.5	
9.0		22.3	51.7	K
9.5		30.0	53.6	
9.4		30.0	57.1	B
9.5		34.5	7.6	
8.8		45.7	37.0	
8.0		59.4	19.8	K
9.1	53	11.8	57.7	αB
9.0		12.2	19.8	K
8.9		42.9	5.8	
9.4		45.4	55.9	B
9.4		57.2	13.6	Kb
9.4	54	7.7	1.5	
8.4		16.7	21.5	K
9.1		33.7	50.5	αB
9.3		39.5	25.6	B
9.4		51.5	8.4	
9.3	55	6.2	1.1	
8.8		17.8	58.8	
9.5		38.6	58.0	
9.5		47.5	8.5	
9.0	56	26.4	9.5	
9.3		28.7	11.6	
9.5		33.1	51.7	
9.0		39.4	26.3	K
9.5		40.7	33.6	
9.5	57	14.4	26.4	
9.0		20.3	17.0	
9.3		24.4	4.2	
9.5		26.0	10.1	
9.0		30.9	30.0	K
9.5		35.0	3.4	
10pr.		+ *30.82*	— *1.57*	

2181 — 2240

m	7ᵘ — 8ᵘ		+0°	
	′	″	′	
9.5	57	53.0	2.2	
9.5		57.4	56.0	
9.5	58	4.4	9.1	
9.5		15.4	55.0	
8.5		54.4	41.2	B
9.3		55.4	18.1	
9.5		58.4	21.1	
9.0	59	14.9	51.4	
9.0		17.9	30.7	
9.0		18.7	23.7	
9.0		21.9	37.9	
8.5		33.4	33.6	K
9.0		53.5	37.2	
9.5	0	2.4	5.0	
8.5		47.8	35.0	K
8.7		53.1	53.5	K
9.5		59 0	20.0	
9.2	1	1.4	5.2	
8.5		2.5	32.2	K
8.2		21.6	52.7	K
8.8		42.7	42.2	K
9.4		48.1	25.5	
8.3		53.6	18.1	
9.1		58.3	32.8	B
8.9	2	8.6	6.6	
8.5		15.3	45.8	K
9.0		37.3	32.7	
9.3		39.9	20.8	
9.3		40.5	5.0	
9.3		49.8	32.7	*a*
8.8		58.2	45.5	Kb
9.4	3	0.5	7.7	B
9.0		5.3	27.7	
9.3		20.7	26.0	
9.5		28.3	48.2	
8.6		35.7	6.4	K
9.3		54.6	3.5	
9.5		56.4	29.4	
8.5	4	34.8	50.5	
9.0	5	4.2	46.1	
9.5		5.5	11.1	
9.5		8.2	11.5	
9.2		14.6	39.6	*b*
9.5		42.2	3.9	
9.5		56.2	23.5	
9.5	6	16.2	31.6	
9.0		25.4	1.8	K
9.5	7	7.0	28.4	
9.3		11.8	58.0	*a*
8.8		16.7	57.4	
9.4		28.1	25.4	B
8.5		58.4	20.8	
9.0	8	29.4	28.7	
9.2		32.8	53.2	αB
9.3		44.2	36 8	B
9.0		48.4	5.8	
9.1		50.5	35.7	B
9.5		54.5	12.6	
9.4		55.8	25.4	
9.4		58.5	13.2	
10pr.		+ *30.82*	— *1.71*	

2241 — 2300

m	8ᵘ		+0°	
	′	″	′	
8.7	9	1.3	10.8	K
9.4		10.1	31.5	B
9.5		13.1	37.5	
9.5		24.8	55.3	
8.8		28.4	28.0	
9.5		36.0	20.0	
9.0		51.1	37.5	
8.0	10	11.3	55.6	K
8.6		17.8	1.8	B
9.3		18.0	25.4	
9.0		27.0	46.5	K
9.0		30.6	48.2	K
9.4		33.3	4.6	B
9.5		33.8	29.1	
9.4		34.3	7.7	
9.3		55.0	33.8	
9.3		57.0	3.0	
9.5		59.2	23.4	
9.3	11	19.4	43.8	
9.5		20.0	0.9	
9.5		21.4	42.6	
9.5		31.0	11.0	
9.5		33.2	58.4	
9.5		36.6	11.6	
9.5		51.7	6.1	
9.3		55.0	33.8	
9.4		57.5	37.0	B
9.2		58.0	44.1	B
9.5	12	16.5	8.4	
8.3		25.7	52.4	B
8.5		32.1	40.2	
9.5		40.9	50.2	B
9.5	14	3.2	39.9	
9.5		21.2	23.4	
7.9		36.9	17.5	K
9.5		45.1	47.3	B
9.0		59.2	16.8	B
9.0	15	1.5	40.1	
9.5		3.2	8.6	
9.5		30.0	2.8	
9.5		35.5	27.4	
9.5		35.5	29.9	
8.5		36.8	49.5	B
9.5		46.3	26.4	B
9.5		50.2	19.4	B
9.5		57.0	10.0	
9.5	16	10.9	21.4	
7.5		19.2	31.6	Lb
9.4	17	19.5	12.7	B
8.3		22.0	19.9	B
9.5		49.0	31.4	B
9.2		51.5	58.9	
9.2	18	16.8	36.2	B
7.8		20.7	4.7	K
9.3		25.4	54.2	
8.5		38.9	41.9	K
9.0		47.2	33.8	K
9.3	19	18.4	58.6	
9.3		33.8	8.5	
9.0		46.8	32.0	K
10pr.		+ *30.82*	— *1.83*	

2049ᵃ

9.6	*35*	*19.2*	*53.9*	B

2071ᵃ

9.5	*39*	*16.4*	*4.1*	B

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	8ᵐ		+0°			8ᵐ		+0°			8ᵐ—9ᵐ		+0°			9ᵐ		+0°			9ᵐ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	19	53.0	10.3		9.5	33	33.5	3.4	B	9.5	47	25.2	51.4		9.5	6	20.4	11.7		9.0	32	27.1	2.4	
9.4	20	11.0	4.8		9.2	34	20.9	3.4	K	9.2		30.9	20.1	B	8.0		27.5	24.1	K	9.3		48.0	26.3	
8.5		12.0	58.8	K	9.4		29.2	57.4		9.1		36.2	41.3	Bb	9.3		42.1	30.1		9.3	33	3.2	3.0	
8.7		17.2	23.2	B	9.5		29.2	43.0	B	9.2		36.4	42.4	B	9.3		45.1	16.7	B	9.3		14.2	21.8	
7.7		51.2	44.8	L	9.0		32.2	49.1		9.4		49.0	15.9		8.8		46.0	55.1		9.5		42.2	3.9	
8.5		57.4	7.4	K	9.5	35	12.4	22.2		9.5		51.4	23.6		9.3		54.5	13.1		7.2	34	58.2	21.8	K
9.0		57.7	10.8		9.5		30.3	7.0		9.5	48	7.7	12.6		9.3	7	2.9	14.9		9.0	36	33.8	13.9	K
8.8	21	10.4	39.3		9.5		36.0	7.6		8.8		25.4	54.5		9.5		13.3	57.5		9.0		51.6	21.5	
9.5		14.0	11.7	a	9.5		50.1	20.1		9.4		49.5	42.8	B	9.5		32.8	52.5	B	9.1	37	2.2	9.7	B
7.7		42.8	11.5	K	9.5	36	10.4	13.9		8.0	49	18.5	56.5	Kb	8.8	8	8.7	13.6	K	9.5		24.3	0.6	
8.9		56.0	27.6	K	9.5		28.5	10.0		8.3		22.0	8.5	K	9.5	9	56.9	54.3		7.7		46.1	11.6	K
7.0	22	21.5	44.2	K	8.3		56.4	6.3	K	8.3	50	2.3	20.8	L	9.5	10	20.5	26.7		8.5	38	20.0	27.4	K
7.3		33.1	30.0	K	8.8	37	16.1	51.6	K	8.8		23.7	48.2		8.3		42.3	37.6	K	9.3		43.1	1.8	
9.3		40.0	19.3		8.5		20.6	15.2	K	9.5		34.0	14.5		9.5		52.2	28.6		9.0		45.7	39.8	
9.5		52.5	18.4		9.1		38.4	52.0	K	9.5	51	28.0	23.4		8.8	11	38.9	57.7	Kb	9.4		48.3	33.7	
9.0	23	11.1	35.3		8.5		49.0	13.9	K	9.5		30.9	19.1		9.5		44.6	26.1		9.5	39	9.5	23.4	
9.5		14.6	56.5		9.1		53.1	51.1	K	9.0		41.6	39.7		9.5	12	31.5	20.0		8.7		13.9	3.0	K
9.5		18.0	10.7		9.3		57.4	53.8		9.1		45.5	20.9	K	8.2	13	0.1	53.1	K	8.2		38.8	3.1	K
9.5		20.1	35.6		7.4		58.0	45.1	K	9.5	52	9.0	10.2		7.5		10.5	46.9	K	9.0	40	3.2	55.3	
9.5		30.0	5.6		8.5		58.8	19.0	K	9.2		26.0	3.6		8.6		29.9	26.7	K	9.3		10.1	53.6	
8.5	24	11.4	49.8	K	9.5	38	12.5	43.9	B	8.8		49.3	16.2		9.3		32.6	50.4		9.5		52.2	18.7	
8.5		13.0	18.6	K	9.4		12.8	43.4	B	8.2	53	3.1	43.2	K	9.4		40.0	23.5	B	9.0	41	31.7	5.0	K
9.0		20.7	35.2		8.3		45.9	17.4	K	8.5	54	0.1	17.6		9.3		47.6	5.9		9.5	42	3.0	13.9	
9.5	25	12.4	24.7		9.0	39	3.6	52.8		9.3		4.2	57.6		8.0	14	46.0	11.2	K	8.8		11.5	22.5	K
9.5		13.1	25.7	B	9.3		8.0	2.8		9.5		6.0	15.7		9.3		58.1	26.4		7.7		46.9	26.5	K
9.5		17.0	13.5		9.4		13.0	17.2		9.3		9.0	51.0		9.5	15	35.4	4.8		7.5		47.3	46.8	K
9.5		18.7	48.3	B	9.3		20.2	31.6		8.2		10.5	34.6	L	9.5	16	44.3	12.8		9.4		59.6	34.4	B
9.4		28.3	27.9	B	9.5		22.0	50.0		8.8		18.5	2.7	K	8.8	17	0.2	48.2		8.8	43	43.3	30.1	
9.4		32.3	52.6		8.2		22.2	11.1	K	6.2		33.0	5.4	K	9.0		10.6	7.9		8.8		52.6	59.3	K
9.5		38.7	26.2		9.2		49.6	31.5	B	8.8		52.6	24.2	K	8.9		42.5	28.5	B	9.3	44	14.0	57.0	
8.0		59.6	10.9	K	9.1	40	7.6	0.9	B	8.2	55	23.8	59.4	Kb	8.9		44.6	11.7		9.3		20.2	15.8	
9.5	26	23.6	49.1	B	8.2		8.5	36.5	K	9.5	56	2.8	17.0		9.3		48.8	4.9		9.4		36.4	29	B
*9.5	27	4.7	6.7		8.2		9.2	32.9	K	9.4		58.8	11.1	B	9.5	18	10.9	17.8		7.0		46.0	45.2	K
8.8		19.9	46.3	B	9.4		53.7	15.1		9.3	57	3.3	36.6	b	9.5		16.0	24.7	B	9.0		47.9	29.5	
7.3		43.0	53.0	Kb	9.2		53.7	13.1	B	9.2		30.5	8.0	K	8.9		23.9	58.1		9.5	45	25.7	14.0	
9.0		45.0	37.6	K	9.5	41	1.1	9.5		9.3	58	4.3	54.2		9.5		46.5	8.2		9.3		29.0	43.1	
9.5		45.1	35.2		9.3		4.0	32.6		9.5		8.7	9.1		9.3		57.7	2.9	B	9.5		54.6	0.8	
9.2	28	5.9	11.2	B	9.2		19.7	53.3		9.5		25.4	18.7		9.2	19	2.8	6.4	B	9.5	46	2.7	14.0	
8.5		18.9	3.2	K	8.7	42	36.8	55.6	K	9.5	59	20.0	44.5		9.2		19.4	16.0		9.3		9.4	53.2	
8.2		26.4	0.3	K	9.2		39.3	7.0	b	9.2		22.8	18.3	b	9.2	20	10.6	17.4	K	9.3		51.5	25.4	
9.4		38.8	2.2	B	9.3		46.8	7.8		7.8	0	8.3	39.5	K	9.5	21	25.9	18.5		8.2	47	9.0	15.6	L
9.5		44.0	17.3		9.2		59.6	35.7	aB	9.3		17.4	21.8		8.8		26.4	25.4	K	8.2		34.7	30.4	L
9.5		53.0	12.4		9.0	43	1.0	31.6		9.1	1	10.1	17.9	B	9.3		50.0	6.3		9.5	48	3.7	59.0	
9.3	29	0.1	33.2		8.9		23.0	38.4	B	9.5		29.3	40.1		9.3	22	11.2	46.4		9.5		8.2	50.8	
9.2		9.1	52.6	Kb	9.5		45.0	25.6	B	8.5	2	4.3	12.2	K	9.3		31.9	3.6		9.5		25.5	34.3	
9.0		27.2	53.3	K	8.5	44	23.7	18.5		9.1		12.7	48.5	aB	9.2	23	16.3	56.7	b	9.5		29.2	17.9	
9.0		27.2	41.6		9.3		34.0	25.4		8.9		15.5	47.3	K	9.3		43.4	23.0		8.8		36.0	38.7	
9.4		47.4	50.2	B	9.3		57.8	27.9		9.5		30.7	3.9		9.5	24	30.5	45.0	B	8.3	49	13.7	13.2	K
9.5		51.9	6.5		9.0	45	4.0	44.1	Kb	9.5		47.4	1.4		9.4		59.4	10.4		9.3		40.1	11.2	B
8.6	30	2.7	3.9	B	9.0		5.2	4.7	B	9.2		49.8	56.7		9.3	25	19.8	59.6		8.2		58.0	34.4	K
9.3		14.1	36.3		9.5		7.2	8.9		8.2		51.6	17.9	K	8.3	27	11.3	9.2	K	9.5	50	11.7	16.3	
9.3		16.0	6.6		8.6		31.2	25.0	K	8.2		55.2	31.7	K	9.0	28	10.1	14.9		9.5		49.5	19.5	
9.1		46.0	7.6	B	9.4		32.9	20.2		9.4	3	10.0	36.9	B	8.0		22.3	51.1	Kb	9.1		52.9	15.7	B
9.1		50.7	48.3	Bb	8.7	46	24.1	1.0	B	9.5		11.5	45.4		9.3	29	2.6	53.4		9.5		59.2	55.8	
9.5	31	38.0	18.6		9.0		31.3	18.2	B	9.3		20.2	24.7	B	9.3		4.8	13.6		9.5	51	17.5	32.7	
9.3		56.4	14.5		8.4		31.7	42.2	B	9.0		42.3	13.5		8.0	30	29.3	19.2	K	9.5		17.6	48.1	
9.3	32	18.2	19.3		9.4		34.0	7.0		7.4	4	2.6	53.2	L	9.3		30.8	52.5	b	9.3		55.7	45.2	
9.0	33	5.8	5.9	K	9.1		36.5	47.7		9.5		30.1	27.7		9.3	31	10.9	58.1	B	9.5	52	13.7	3.3	
9.0		9.1	19.8		9.4		47.4	1.5		9.5		52.4	9.6		9.3	32	0.0	27.4		9.5		51.4	49.7	
9.5		13.2	7.7		9.4	47	11.6	24.1		8.8	5	22.6	55.6	K	9.0		25.1	26.1		8.8	53	12.5	29.8	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.82	1.98		10pr.		30.81	2.15		10pr.		30.80	2.31		10pr.		30.79	2.54		10pr.		30.78	2.77	

2333ᵃ				
9.6	27	6.8	55.6	B

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	9ʰ—10ʰ		+0°			10ʰ		+0°			10ʰ—11ʰ		+0°			11ʰ		+0°			11ʰ—12ʰ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	53	26.5	15.7		9.3	22	45.2	28.6		9.5	50	0.7	33.0		9.3	15	38.4	5.7		9.4	40	27.3	3.2	B
9.5		46.0	57.4		9.5		50.5	14.6		9.5	51	26.4	38.2		6.2		52.7	55.1	K	9.5		46.6	40.6	
9.5		53.0	5.5		5.3		53.7	6.1	K	9.5	52	39.1	9.0	B	9.5	17	5.2	9.9		6.5	41	38.8	28.8	K
9.5	55	7.7	3.3		9.3	23	11.0	58.1	B	9.5	53	20.2	34.8		9.5		29.0	25.6		9.3	42	26.0	36.3	
9.3		58.4	20.8		9.5		58.7	43.7	B	8.0		39.3	49.6	Kb	9.5		29.6	41.8		9.5		37.1	33.0	B
9.5	56	6.5	29.1		9.4	24	21.3	37.7	B	8.5	55	8.0	42.0	K	9.5		36.6	54.4		9.5	43	0.0	32.0	
9.2		37.1	51.9	b	9.5	25	30.0	59.2		9.3		28.3	53.0		8.8	18	22.3	1.8		9.5		0.7	17.8	
9.3		45.9	39.0		9.1	26	31.8	49.5		7.5		51.0	1.8	K	8.8		27.7	43.7		9.5		20.2	7.1	
9.5	57	6.7	0.1		9.0		34.4	55.5	K	6.5	56	12.5	48.2	K	9.5		57.6	45.9		9.4		30.3	32.8	B
8.5		34.0	12.9	K	9.2		35.8	42.6	Kb	8.5		36.4	45.0	K	9.4	19	31.9	16.1	B	9.2	45	9.3	12.6	b
9.5	58	31.2	3.4		9.3	27	28.4	23.3		9.5		40.6	13.7		9.4		53.2	9.2		9.4		32.9	51.0	
9.5	59	12.9	17.2		9.5		33.0	7.9	B	9.3		51.3	5.0		9.5		57.7	7.3	B	9.5		36.1	1.6	
9.0		46.4	56.9		8.8		50.0	22.6		9.5	57	6.6	4.0		8.0	21	53.8	27.6	K	9.3	46	10.0	29.2	
9.0	0	1.5	26.1	K	9.5		50.5	4.7		9.5		28.0	43.2		9.5	22	50.9	44.8		9.5		34.5	16.6	
4.1		31.0	20.0	K	9.3	28	39.7	20.2		9.5	58	15.6	11.7		9.5	23	18.2	30.0		9.3		51.1	43.5	
9.3	1	6.0	4.5		9.4	29	32.2	33.9	B	*neb*		23.1	46.2		9.5	24	2.8	30.0		9.5	47	15.9	22.5	
9.3		24.0	6.0		9.4		38.3	29.7	B	9.5		33.4	55.0	?	9.5		11.4	10.5	K	9.5		34.8	3.4	B
9.5		51.6	27.5		9.4		45.4	23.9		9.5		40.9	58.4		9.5		22.0	51.8		8.3		36.7	14.7	K
9.5	2	0.1	33.1		9.3		46.4	15.7		9.0		44.3	6.7		9.1		30.2	48.3	B	9.1	48	13.2	43.9	Bb
9.5		8.2	0.4		9.0		54.1	16.5		9.1	59	2.4	30.3	B	9.0		45.3	42.8		9.2		41.0	0.2	a
9.3		36.3	37.5		9.5		56.2	2.1		8.2		3.7	40.3	K	8.2		52.7	24.2	L	9.5	49	24.1	52.1	
9.3		37.6	55.8		8.8	30	10.8	8.5		9.5		9.7	4.5		9.4	25	14.4	23.5	B	9.5		25.8	17.6	
9.3	3	30.4	28.1	b	9.3		18.5	15.0		9.5		38.8	54.2		9.5		20.0	20.5		9.4		50.8	12.8	B
9.5		44.1	56.5		9.3		23.1	32.7		9.4		41.9	18.9	B	9.4	26	9.1	28.7	B	9.2		57.7	55.4	
9.4	4	6.1	24.2		9.1		33.8	57.2	b	9.4		44.0	26.3	B	9.5	27	2.5	18.3		9.5	50	14.0	37.3	
8.8		34.7	57.8		9.5	31	0.5	0.5		9.5		51.0	12.4		9.5		39.4	9.7		9.5		38.6	58.5	
9.3	5	1.4	5.0		8.2	32	35.5	36.4	K	9.4		52.5	58.8		9.2		53.6	14.5		9.5		57.2	4.9	
9.5		36.6	9.1		9.0		47.3	53.1	K	9.5	0	17.6	11.5		9.5	28	11.8	45.8		9.5		57.7	36.0	
9.5		44.6	32.1		9.4	33	10.9	17.1		9.5		47.5	17.5	B	9.0		42.5	7.2	K	9.5	51	6.2	50.7	
9.5	6	39.6	13.6		9.0		29.5	5.1		8.1	1	10.1	13.0		9.4		43.7	57.4	B	8.8		52.9	48.5	
9.3		47.0	9.8	B	9.3		34.8	38.2		9.4	2	29.9	2.1	B	8.0	29	51.8	14.1	L	9.5		54.9	49.9	
9.5		52.1	21.9		9.5		38.4	18.4	B	9.0		30.3	38.6		8.7	30	4.9	16.3	L	9.3		55.1	37.6	
8.8	7	22.6	25.8	K	7.9		45.1	29.5	K	9.0		30.5	31.6		9.1		32.2	31.7	B	9.5	52	2.3	3.6	B
9.3	8	50.2	4.2		8.2	34	9.7	29.2	K	8.9	3	27.6	55.2	K	9.3		39.7	22.2		9.1		6.8	57.1	
9.5	10	12.0	4.2		9.3	35	27.4	40.1		9.5		34.5	22.6		9.3		49.5	19.3		8.7		58.8	6.9	K
9.5		36.5	17.2		9.3	37	9.2	11.0		9.5	4	31.0	53.1	B	9.4	31	57.6	45.1	B	9.4	53	30.5	4.5	B
9.4	11	26.4	17.7	B	9.4	38	12.2	7.1		9.4		42.2	5.6	B	9.5	32	0.9	9.8		8.5	54	1.2	26.3	K
9.3		27.8	20.9	B	9.3		36.5	40.5	K	8.1		46.0	23.3	B	9.5		54.1	48.6		8.5		2.2	25.3	K
9.3	12	0.2	58.6		8.8		41.0	52.0	K	9.0		50.1	20.5	B	9.5	33	1.2	4.3		9.5		6.9	5.8	
9.4		11.4	47.0		9.3		56.4	23.7		9.1	5	51.7	53.8	aB	9.5		28.8	43.8		8.3		31.7	54.3	
8.0		13.1	30.7	K	9.3	39	20.5	17.0	Kb	5.3	6	21.0	43.6	K	7.2		30.3	7.7	K	8.7		32.0	52.2	
8.0	13	56.6	30.7	K	9.5		23.9	36.8		9.4	8	28.2	41.3	Bb	9.5	34	53.0	44.0		9.0	55	3.1	58.7	
9.5	14	13.5	7.1		9.5		30.2	51.4		9.5		44.4	14.7	B	9.3		56.9	50.3	B	8.3		5.9	50.4	L
9.5		20.9	59.3		9.5	40	56.1	3.3		9.5	9	27.2	25.6		9.5	35	13.4	54.6	B	9.5		14.7	26.7	
9.5	15	29.6	2.6		9.3	42	50.1	30.8	b	9.3		30.2	44.3	B	9.4		36.6	42.2	B	9.5	56	31.3	13.1	
9.0		30.6	21.1		8.8	44	4.3	16.5	K	9.5	11	36.2	18.4	B	7.7		54.0	58.6	K	9.3	57	7.6	53.3	
9.5	16	3.4	14.2		9.3		13.3	6.7		9.0		38.3	56.1		9.3		59.3	7.9		9.4		14.9	31.7	B
9.5		31.6	33.9		9.2		36.8	23.9		9.4	12	5.4	16.0	B	9.2	37	1.3	25.3		9.5		33.1	34.9	B
9.0		44.3	56.0		9.3		38.1	37.2		8.5		6.3	36.9		9.5		14.6	18.7		9.5		25.5	5.0	
8.0	17	26.1	19.9	K	6.5	45	10.9	34.7	L	8.9		29.3	29.3	B	9.0		20.1	43.0		9.5	58	23.8	55.3	
9.5	18	0.4	37.3		9.1		16.7	22.3	B	* 9.0	13	42.3	9.7		7.6		37.0	16.0	L	9.5		40.7	55.7	
9.3		5.1	12.0		8.8		27.5	55.3	B	9.0		43.5	1.9		9.3	38	37.9	3.2	B	9.3		42.5	48.1	
9.5		9.7	2.0		9.0	47	22.1	10.6		9.3		48.8	55.4		8.8		50.0	37.1		9.0		56.6	42.5	
9.5	19	14.7	8.7		9.3	48	3.0	52.1		9.0	14	20.8	49.5	K	9.4	39	25.0	20.3	B	7.6	59	46.1	10.1	Kb
8.2		26.6	35.3	Kb	8.1		12.3	53.6	L	8.7		23.1	44.7	K	9.5		46.7	4.4		9.5	0	26.8	51.2	
9.5	20	21.6	44.6		8.8	49	19.6	26.1		9.2		30.7	26.1	B	9.0		52.0	37.7		9.5		29.2	8.5	
9.2		32.2	10.6	b	9.5		36.3	35.1		8.2		31.3	21.9	B	9.0		54.9	53.6		8.8		42.4	25.7	K
8.8	21	17.6	22.8	K	7.5		44.1	27.8	K	8.8		32.5	50.4	K	9.5	40	9.6	15.1		9.3		48.4	10.6	
9.5		32.1	21.9		9.5		54.2	4.2	B	9.1		37.3	10.2	K	9.0		20.8	28.1	Kb	9.2	1	1.1	48.8	b
9.5	22	21.0	3.3		8.5		54.7	36.8	K	8.7		42.0	55.5	K	9.3		26.6	20.3		9.3		8.3	19.7	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.78	2.84		10pr.		30.76	3.11		10pr.		30.75	3.24		10pr.		30.74	3.31		10pr.		30.72	3.34	

2770ᵃ				
9.6	13	39.0	17.0	B

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	12ᵐ		+0°			12ᵐ		+0°			12ᵐ—13ᵐ		+0°			13ᵐ—14ᵐ		+0°			14ᵐ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	1	26.0	2.0		9.0	29	29.7	17.4		9.0	59	48.3	18.4		9.0	30	0.5	46.0		9.5	2	16.6	38.0	
7.7	2	0.7	2.4	K	9.3		43.6	33.2	B	9.5		56.8	52.7	B	8.5		6.2	31.2	Kb	7.5		29.0	2.0	K
9.1		14.0	1.7	K	9.5		46.8	46.5		9.3	0	32.7	50.9	K	9.5		13.2	34.5		8.8		35.9	56.9	
9.3		53.4	3.5		8.9		50.7	36.8	K	9.5		52.4	16.6		8.8		21.7	6.4	K	8.9		50.2	23.8	
9.5	3	24.3	46.8		9.5	31	28.8	44.8		9.5	1	2.9	25.5		9.3		45.5	8.3		9.0	3	35.6	56.0	Kb
9.0		27.3	21.4		8.8	32	0.0	30.6	K	8.8	2	2.5	41.3	K	9.5	31	12.4	59.2		9.4		42.8	2.7	
8.0	4	0.5	58.6	Kb	8.8		34.9	16.3	K	9.5		9.9	46.4		9.3	32	3.2	21.9		9.5	4	9.0	2.1	
9.5		28.7	18.7		9.5		45.3	12.0		8.7		39.3	8.9	K	9.3	34	24.5	35.8		9.3	5	50.8	9.3	
9.0		49.3	39.2		9.0	33	38.8	10.4	K	9.0	3	18.2	3.4		9.3		25.0	1.1		9.3	6	19.2	56.9	
8.5	6	28.4	23.5		9.5		45.8	3.8		8.5		19.2	20.2	L	9.0		31.8	36.1		9.5		34.6	27.4	
8.0		28.4	8.9	B	9.3		58.0	3.5		9.5		52.5	2.4		9.3	35	28.4	28.8		9.5		38.5	56.5	
9.5		44.0	39.6		8.3	34	52.7	29.5		9.5	4	38.1	1.9		9.4	36	1.0	48.9		9.0		55.3	5.0	
9.2	7	22.2	52.0		9.2	35	22.4	35.7	B	9.5	5	22.2	38.5		9.3		18.2	54.6	b	9.0	7	26.7	55.2	Kb
8.7		35.1	6.2		9.3		25.0	58.0		9.2	6	35.5	41.7		9.5		49.2	53.2		9.5		39.0	2.7	
9.3		39.2	14.7		8.8		39.5	13.6		9.0		41.2	31.2		9.5	38	2.9	55.8		9.4	8	38.7	21.5	
9.0		58.9	32.2		9.0		43.8	46.8		9.0		48.2	56.3		9.5		9.5	45.6		9.4		39.9	56.7	
9.5	9	36.0	4.3		9.5		51.3	35.5	B	9.5	7	14.5	43.7		9.3		39.6	53.8		9.5		44.7	19.4	
9.0		58.3	45.8	K	9.5	36	33.0	9.7		9.2		58.5	42.4	Kb	9.0		55.9	15.3		8.8	9	35.6	36.5	
9.0	10	18.1	49.6	K	9.3	37	13.0	24.3		9.5	9	41.7	57.0		9.3	39	11.9	9.5		9.4	10	15.7	35.4	
6.3	11	14.7	0.9	Kb	9.5		56.1	15.4		6.7	10	5.5	5.3	K	9.5		31.9	59.2		9.5		40.6	34.8	
9.0		25.0	40.2		8.2	39	14.7	7.2	K	9.5		16.5	11.3		9.5		48.4	58.1		9.5	11	1.2	33.5	
9.2		26.5	47.6		9.5		19.7	55.8		9.5		46.2	39.0		9.0	40	25.7	7.6		8.4	12	3.6	39.6	K
9.5		47.2	40.2		8.2	40	42.8	26.0	K	9.5	11	36.2	56.9		9.3		57.4	8.8	a	9.5		38.7	28.2	
9.0		48.1	11.7	K	9.4		45.0	38.1	B	9.5		39.5	40.4		9.4	41	49.7	8.9	B	9.4	13	2.2	27.1	
9.3	12	27.9	50.7		9.5		51.6	18.4		9.5		57.2	7.3		9.0	42	20.5	37.3		7.0		7.0	50.9	K
3.2		29.8	8.0	K	9.3	41	37.0	51.7		9.5	13	47.1	55.3		9.5	43	2.2	4.6	R	9.2		12.2	54.4	K
8.0		50.0	40.2	K	9.5	42	23.9	59.3		9.2		55.9	10.3		9.5		31.6	42.8		9.4		42.2	33.4	
9.3	13	9.0	31.0		9.3	43	17.4	45.8		8.1	14	43.9	42.0	L	9.5	47	4.6	13.5		9.5	14	7.0	30.2	
9.1		28.4	35.5		8.3		18.0	1.8	K	8.1	15	4.1	10.3	K	9.5		18.0	56.1		9.5		29.6	34.4	
9.2		50.2	9.3	B	9.3		51.0	46.7		8.6	16	17.5	2.6	K	9.0	48	43.1	19.1	R	9.3	15	6.2	19.6	
9.2		52.1	33.5	K	9.3	44	11.5	21.9		8.1		55.7	26.0	K	9.0	49	1.6	29.9		7.0		21.3	1.5	K
8.3	14	12.3	38.0	K	9.3		22.3	20.6		9.0	17	21.9	14.8		9.5		4.8	46.8	B	9.5		38.7	18.1	K
9.4		31.7	12.6	B	8.0		27.5	52.4	K	8.8	18	22.2	17.9	Kb	8.8		24.2	53.7	K	9.0	16	10.4	42.7	
9.3		41.7	1.3		9.3		29.4	9.0		9.6	19	28.5	30.4		8.8		26.1	18.5		9.5		33.3	6.4	
8.8	15	24.0	33.2	Kb	9.0		45.0	24.2		9.5		37.1	3.2		8.8		58.1	22.2	R	9.3		50.6	40.7	
9.3		55.3	21.1		8.7	46	2.5	0.7	K	9.5		50.5	29.5		8.9	50	51.1	43.7		9.5		51.9	56.1	B
9.5	16	18.9	51.1		8.6		11.0	53.8	K	9.5		53.9	37.4		8.7	52	15.6	31.6	K	9.3	17	6.7	23.3	
9.5		56.5	15.1	B	9.5		44.1	7.2		9.5		55.6	1.2		7.5		19.1	46.1	Kb	8.7		11.2	41.1	K
9.3	17	0.4	19.5	Bb	9.5	47	35.3	25.0		9.5		57.5	50.3	a	9.0		38.0	43.7	K	9.5		13.6	3.9	
9.3		25.4	23.3		9.5	48	6.7	8.7		9.2	20	2.9	22.8	K	9.5	53	2.1	30.2		8.9		20.7	27.1	Kb
9.5		37.2	3.6		9.5		10.0	9.4		9.5		25.8	32.8		9.5		5.9	56.0		9.4	18	58.2	48.0	
8.2	18	16.9	30.1	K	7.3		14.4	51.0	K	9.3		35.2	38.0		9.3		39.6	30.9		9.1	19	8.8	57.1	Bb
9.0	19	7.7	39.7	K	9.5	49	9.6	19.6		8.5		38.9	26.7	K	9.5		52.6	36.2		9.2		41.1	37.5	
7.7		19.5	37.8	K	9.5		27.8	26.4	B	9.5	21	48.9	3.4		8.9	54	37.2	55.9	R	9.4	20	17.6	57.0	
8.7		36.2	55.0	K	9.3	51	32.0	58.5		8.2		50.6	52.4	L	9.5		51.2	13.4		8.8		22.2	46.3	K
9.5	20	44.3	19.7		9.0		42.3	21.0		9.5	22	32.2	8.5		8.2	55	9.7	43.8	K	8.8		40.0	1.8	
9.5	22	9.2	52.7		9.5	52	8.9	6.5		9.4	24	41.2	41.8		9.1		50.3	38.6	K	9.5		57.2	57.7	
9.5		16.9	8.6		8.3		27.3	32.6	Kb	9.2		42.4	31.0	b	8.5		58.9	4.5	R	9.5	21	21.7	28.5	
9.3	23	3.2	40.2	b	8.8	53	6.8	14.7		9.1		46.1	14.9	B	9.5	56	5.7	32.5		9.3		24.2	22.9	
9.5	24	13.7	51.5		9.5	54	59.8	33.2		9.5	25	18.7	13.3		8.3		37.3	20.4	K	9.0		32.1	19.1	
9.5	25	22.0	53.8		9.5	55	4.5	4.8		9.5		22.2	3.8		8.8	57	26.8	15.6	R	9.2		44.7	45.9	
8.0		34.5	31.6	K	9.5		58.3	40.8		9.2		33.0	8.0		9.5	58	25.7	50.9		8.9	22	10.0	55.0	B
9.3	27	5.8	44.2		9.0	56	9.3	11.1		9.1	26	19.5	34.1		9.5	0	13.3	52.5		9.5		14.0	55.3	a
9.3		8.8	58.7	b	9.3	57	4.0	40.2		8.7		46.2	51.7		7.5		16.0	29.6	L	9.3		35.2	44.1	
9.5		41.8	52.9		8.0		13.3	3.2	L	7.8		53.7	26.2	K	7.0		27.2	36.9	K	9.1	23	12.8	8.0	b
9.2	28	35.0	3.6		9.5	58	11.3	53.5		3.5	27	21.2	8.0	K	8.5		49.9	53.7	K	9.0		45.7	25.9	K
9.3		39.4	59.2	B	9.0		44.7	7.9	K	9.5		58.9	19.2		9.5	1	12.0	34.1	B	9.5	24	22.2	12.8	
8.3		57.0	30.2	K	9.3	59	2.8	48.8		9.5	28	24.2	56.9		9.3		39.7	36.9	K	9.5	25	21.3	54.2	B
8.8	29	11.6	9.6		9.5		4.3	14.7		9.0		31.8	9.1		9.3		44.2	38.3	K	9.5		30.8	22.1	
9.4		12.5	28.3		8.5		28.6	33.5		9.5		55.2	10.1		9.3	2	9.3	11.0		9.5		39.0	54.5	B
		+	−				+	−				+	−				+	−				+	−	
10 pr.		30.71	3.33		10 pr.		30.70	3.32		10 pr.		30.68	3.15		10 pr.		30.67	2.97		10 pr.		30.65	2.78	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	14ˢ		+0°			14ˢ—15ˢ		+0°			15ˢ		+0°			15ˢ		+0°			15ˢ—16ˢ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	25	48.1	37.2		9.5	45	19.2	44.7		9.3	6	48.6	9.4		8.5	29	52.0	20.2	Kb	8.5	52	55.3	32.5	K
9.2		58.9	25.6	b	9.5		36.5	34.2		8.1		57.2	54.1	B	9.2	30	37.0	47.0	K	9.5	53	14.9	55.6	
9.0	26	20.8	6.1	K	9.5	46	2.6	12.5		9.5	7	30.0	23.4		9.5		51.8	44.2		8.5		20.0	45.1	K
9.4	27	1.6	21.8		8.6		21.0	9.5	K	9.5		35.8	38.6		9.5		55.5	37.5		9.5	54	3.9	56.1	
9.3	28	2.0	1.6	B	8.1		25.3	10.9	K	8.9	8	1.5	40.7	K	9.5	31	7.6	9.9		9.5		6.5	51.4	
8.3		24.6	52.4	K	8.9		46.6	42.2	K	9.5		22.5	27.9		9.3		19.5	25.1		9.5		42.8	26.7	
7.8		36.0	51.0	K	9.2	47	2.5	52.1		5.9		26.1	55.0	K	8.0		36.5	9.2	Lb	9.5		46.1	55.1	
9.2		40.6	1.8		9.5		26.4	2.5		8.7		52.2	22.0	L	9.5	32	5.5	11.5		9.5	55	50.0	22.9	
9.0	29	33.7	30.3		9.5		37.0	55.0		9.2	9	3.5	37.2		7.5	34	37.6	55.2	K	9.3	56	53.3	48.9	K
9.3		48.1	23.3		9.5		38.9	34.8	B	9.3		20.0	29.1	B	9.2		50.6	3.3		9.5	57	1.4	7.2	
8.8		58.4	8.8	K	9.1		47.9	40.8	K	9.5		35.3	31.5		9.5	35	0.0	25.7		8.8		5.9	22.2	K
9.5	31	0.2	5.8		9.5		52.0	39.8	B	9.4		46.0	46.6		9.5		24.0	39.0		8.9		50.0	17.0	K
9.4		1.6	32.0		8.9	48	0.2	45.3	K	9.4		58.1	30.8		9.5	36	54.2	34.8		9.5	58	41.3	6.9	
8.8		34.1	17.8	B	9.5		39.3	7.4		9.0	10	12.6	7.2		9.5	37	17.0	13.3		8.0		48.1	1.3	K
9.5		47.7	4.5		9.3		58.2	35.9		9.4		18.0	30.8		9.0		24.0	48.1	K	8.5		54.7	11.7	Kb
8.5	32	2.7	23.3	K	9.4	49	17.9	33.8		9.0		43.7	40.8	K	9.5		51.2	8.7		9.5		54.7	32.4	B
9.5		11.6	30.3		6.0	50	8.9	24.9	K	6.2	11	0.3	5.6	L	9.5		52.7	55.5		9.5	59	54.3	21.1	
9.3		13.7	50.4		9.4		33.9	48.1	K	8.7		13.5	21.6		9.0	38	36.0	27.2		9.5	0	3.1	50.3	
9.3		32.2	54.5		9.3		35.0	0.5		9.1		15.5	38.6		9.1		54.0	40.3	b	9.3		12.0	25.3	
9.4		35.1	48.0		8.6		43.9	40.8	K	9.3	12	0.7	44.1	K	9.3	89	45.0	41.4		9.3		51.1	15.2	B
9.5	33	19.6	5.0		9.5	51	1.7	53.9		9.5		18.1	57.8		7.5		53.9	10.4	L	8.8	1	8.3	57.0	
9.3		24.7	14.0		9.5		4.9	6.5		9.5		42.8	10.8		9.5		59.0	37.2		9.4	2	0.3	38.9	b
7.5	34	2.6	44.2	B	9.5		16.5	1.2		9.3		47.5	18.9	K	9.5	40	42.1	49.8		9.5	3	2.7	11.4	
8.7		12.5	11.5	K	9.3		17.9	6.0		9.5		50.5	46.6		9.5		52.6	11.7		9.4		31.5	54.5	R
9.3	35	59.0	43.0	B	9.5		29.8	52.1		9.0		55.1	4.2		8.8	41	35.5	39.4	K	9.3		33.1	7.4	
9.2	36	3.5	15.0	B	8.5		31.6	14.7	K	9.2	13	0.5	47.1	K	9.5	42	2.7	41.0		9.5	4	15.5	6.2	
9.0		6.7	34.8		9.5	52	0.3	4.8		9.3		12.4	10.0		9.3		35.5	11.8		9.4		23.0	17.4	
8.7		21.2	40.3	K	9.4		6.6	34.1		8.6		42.0	17.7	K	9.5		40.4	17.5		9.1		33.4	11.6	K
9.0		47.3	0.6		9.3		12.5	6.7		7.5	15	39.2	58.8	Kb	9.4		52.0	44.2		8.2		45.3	16.6	L
9.5		53.1	27.1		9.5		16.5	11.1		9.3	16	15.5	14.7		9.5	43	3.3	22.5		9.3		54.9	57.5	
9.5	37	16.7	47.3	Kb	8.9		26.9	30.8	Kb	9.5		29.9	5.5	B	9.5		10.0	48.0		9.5	5	48.4	2.8	
9.5		22.2	12.2		9.5		27.9	7.0		9.5		49.5	34.2		8.8		22.9	18.9		9.5	6	21.0	12.5	
9.3		32.3	2.2		9.5		34.5	28.4		9.4	18	15.0	29.3		9.4		43.3	28.5		9.5		31.4	4.2	
8.5	38	11.1	15.7		9.5	53	11.5	33.7		9.5		28.0	13.3		9.4		55.2	34.7		9.0		49.7	12.8	
9.5	39	0.0	1.0	B	9.2		43.3	12.0		9.0		38.0	47.7	K	9.5	44	7.4	50.3		8.9		52.1	52.4	K
9.5		8.6	37.6		9.4		52.2	19.3		9.2		58.2	59.0	Kb	9.3		29.3	21.9		9.3		57.3	33.0	K
9.3		10.0	2.9	B	6.3	54	24.6	26.2	Kb	9.3	20	14.0	34.2		9.3		45.0	42.4		8.3	7	30.3	6.5	K
9.4		18.6	14.3		9.5	55	43.1	2.9		9.0		34.7	24.1	K	9.5	45	8.8	23.6		9.2		40.7	23.5	
9.4		36.7	53.8		9.5		56.8	3.2		9.5	21	10.3	54.9		9.5		16.5	47.4		9.2	8	7.4	46.5	Kb
9.0		41.0	14.9	B	9.5	56	47.5	17.5		9.5		50.3	2.5		9.2		17.4	5.7	b	9.5		18.4	9.0	
9.1		49.1	55.9		9.5	57	58.8	4.1		9.5	22	11.0	5.6		9.2		19.6	0.7		9.5		50.3	42.3	
9.5	40	3.2	7.5		9.5	58	14.7	40.7	R	9.5	23	25.0	4.2		9.5		55.0	11.1		9.3		51.3	44.6	K
8.5		8.7	19.9	K	9.5		51.5	45.0	Kb	9.5		32.8	8.4		9.0	46	16.5	44.5	K	9.5	9	3.1	9.2	
9.5		54.1	36.9		8.4	0	0.5	35.8	K	9.5	24	32.2	54.5		9.5		18.9	6.9		9.5		13.3	20.1	
9.5	41	34.2	23.0		9.1		5.0	28.5	K	8.8		34.3	40.3	K	9.5		26.4	54.8		9.1		29.9	58.0	K
9.5		44.2	52.2		9.5		10.5	46.0		9.2		39.0	36.2	K	9.5	47	47.0	18.2		9.2	10	5.7	47.5	
9.2		55.6	21.3		9.5		31.0	12.2		9.5	25	9.0	27.3		9.5		49.7	13.6		9.4		10.4	7.8	
9.5	42	0.6	58.3		8.6		35.5	30.2	K	9.2		11.3	9.9	K	9.4		54.3	2.3		9.0		12.4	22.9	K
7.9		38.4	36.1	K	9.5		56.4	1.6		9.5		22.0	0.7		8.5		57.0	30.3	K	9.3		23.9	33.7	B
8.5	43	8.6	34.5	K	9.5	1	31.5	16.7		9.5	26	5.5	19.9		9.5	48	13.6	54.8		9.5		42.6	9.8	B
8.4		23.0	2.7		9.5	2	0.7	41.7		9.5		30.5	30.6		9.5		40.9	58.3		9.5		49.6	6.8	B
8.7		26.7	11.9		9.5		31.9	2.4		9.5		41.7	22.0		9.5		54.2	57.6		9.3	11	3.5	28.1	B
6.5		35.3	20.1	K	8.9	3	21.5	41.1	K	9.0		59.3	23.7		9.3		55.0	53.8		9.2		4.4	44.2	
8.5		37.7	33.7	K	9.5		38.5	24.4		9.1	27	13.5	31.7		9.5	49	53.1	53.6		9.0		6.6	52.5	B
9.3		47.3	44.7	B	9.5	4	53.8	28.0		7.8		24.0	20.6	K	8.4	50	15.3	19.8	L	9.5		21.7	21.6	
9.0		54.7	21.9	K	9.5		57.4	33.9		9.1	28	2.5	47.7	K	9.5		36.3	41.5		9.5		35.4	12.6	
9.4	44	21.2	47.9		9.5	5	9.5	38.0		8.0		36.2	32.4	K	9.4		42.5	28.0	K	9.5	12	9.4	1.4	
9.4		51.2	12.7		7.6		11.9	9.5	L	9.0		36.5	44.6	K	8.7	51	7.5	59.7	K	9.5		19.4	2.1	
9.0	45	5.7	43.8	K	9.5	6	0.8	57.8		8.9	29	23.0	12.6	K	9.5		30.4	2.2		9.3		44.4	26.4	
8.8		11.2	37.3	K	9.1		37.7	33.2	b	9.4		39.1	29.7	B	9.5		37.3	57.2	a	9.3		47.0	35.2	
10pr.			+ 30.64	− 2.59	10pr.			+ 30.64	− 2.44	10pr.			+ 30.63	− 2.19	10pr.			+ 30.62	− 1.88	10pr.			+ 30.62	− 1.60

3222ˢ				
9.3	33	30.0	20.3	B

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	16ʰ		+0°			16ʰ		+0°			16ʰ—17ʰ		+0°			17ʰ		+0°			17ʰ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	12	52.3	47.1	B	9.5	33	48.7	41.7		9.3	55	27.9	30.5	K	9.0	16	41.9	38.5		9.5	31	27.1	55.5	
9.3	13	3.4	22.9	K	8.8		56.7	47.1	K	8.7		38.4	27.5	K	9.5	17	0.8	19.8		9.1		32.4	39.2	K
8.3		42.0	58.9	K	9.5	34	32.0	44.0		9.5		42.4	55.1		9.4		1.9	24.0		9.5		56.9	19.8	
9.5		43.2	13.8		9.4		37.0	24.3	B	6.8	56	15.9	4.9	Kb	9.0		44.4	19.5	K	8.7		59.6	41.9	Kb
7.7	14	11.1	25.5	Lb	9.1	35	11.4	19.1	K	9.5		46.9	49.6		9.2	18	7.4	38.2		9.5	32	1.0	7.6	
8.8		25.3	55.1	K	8.9		16.7	48.0		9.5	57	12.4	26.4		9.1		35.9	46.4		9.0		18.7	21.5	
9.4		41.0	26.3	B	9.5		20.2	53.6	B	9.1		37.3	47.5	K	9.4		46.0	29.5		9.3		21.7	55.7	a
8.4		50.0	51.1	K	9.5		21.7	55.0		9.5		45.2	22.6		9.5	19	5.9	47.8		8.7		34.1	50.8	K
9.4		52.7	34.5	K	8.5		27.2	22.2	K	6.3		54.3	54.7	K	9.3		6.9	1.0	K	9.4		42.4	23.0	
9.3	15	38.3	12.5	K	9.3		49.2	12.2	B	9.1	58	11.4	51.9	K	7.2		9.0	57.7	K	9.5	33	1.6	42.3	
8.5		42.4	5.0	K	9.4	36	4.4	12.4	B	9.4		23.4	11.9		9.5		18.9	11.1		9.5		13.4	41.3	
9.5		57.0	50.7		9.3		47.3	3.4		9.4		50.1	7.7	b	9.0		24.8	22.7		9.5		20.9	7.7	
9.2		57.5	48.1	b	9.5	37	29.8	55.1		8.3	59	13.4	51.3	K	9.5		33.8	9.4		9.5		32.0	12.8	
9.5	16	4.7	38.2		8.8	38	8.2	21.2		9.5		23.4	50.9	a	9.5	20	15.8	15.0		9.0	34	5.1	7.3	
9.0		8.7	27.1		9.5		38.0	13.2		9.0		23.9	27.5	K	9.4		38.3	55.2		9.2		5.2	57.7	
9.2		10.8	48.3		*9.5	39	30.4	45.2		9.5		41.8	1.9		9.2	21	23.5	27.8	B	9.5		25.0	30.0	
8.8		57.8	8.8	K	9.1		36.3	59.4		9.3	0	1.0	58.9	K	5.5		26.4	28.2	K	9.4		37.0	37.5	
9.0	17	45.7	46.4	K	9.3		42.7	42.4	B	9.5		7.4	40.9		8.8		43.8	10.3	R	9.5		56.0	37.9	
9.5	18	2.0	9.7		9.5		55.8	4.7		9.3		30.4	5.9		9.5		50.4	32.7		9.5	35	20.4	19.3	
9.5		35.4	30.9		9.5	41	15.2	5.9		9.4		59.5	10.2	B	9.0		51.3	3.1		9.0		28.0	42.7	K
9.2		55.0	6.9	b	9.5		22.5	15.3		9.0	1	22.9	13.6	K	8.5	22	48.4	12.4	K	9.3	36	2.8	21.3	
9.3	19	33.2	35.8	K	8.7		43.7	16.3	K	9.5		27.4	50.3		9.5	23	16.4	32.3		9.5		15.5	15.5	
9.5	20	2.7	19.5		8.4		55.2	11.1	K	9.3	2	2.1	1.5		9.0		17.4	42.7		7.7		46.0	26.1	Kb
9.0		6.8	48.6	Kb	9.1		59.1	58.0		8.5		18.0	9.2	K	9.5		48.7	55.7		9.5	37	41.0	59.7	
9.4		16.5	49.5		9.5	42	40.3	27.4		9.0		18.9	31.9		9.5	24	7.9	35.7		8.8		53.9	54.1	
9.0		18.4	34.1	K	9.5	43	10.0	5.6		8.5		19.6	44.0	Kb	9.5		9.0	2.6		8.8	38	4.3	7.8	Lb
9.5		20.5	58.9		9.4		14.7	34.4	B	9.5		25.9	32.6		9.5		20.2	53.5		9.4		36.5	45.7	B
9.5		30.0	20.2		8.3		58.3	33.7	L	9.2		28.9	24.0		9.5		32.8	44.5		9.5		43.5	49.3	
6.0	21	11.5	58.5	K	8.9	44	13.1	44.2		7.0		52.6	41.2	K	6.8		32.9	9.8	K	9.3		48.1	43.9	
7.2		19.2	23.6	K	9.5	45	30.6	11.3	B	9.5	3	57.2	53.4		8.8		32.9	38.5	B	9.5	39	20.0	44.8	
8.5		45.2	34.5	K	9.5		32.1	5.1		8.9	4	20.9	28.1		9.2		36.9	54.0	aB	9.5		31.8	15.1	
9.3		49.8	34.8	K	9.5		33.6	14.3		9.5		43.8	14.9		9.3	25	13.4	30.5		9.5		42.5	41.4	
8.5	22	35.7	11.5	K	7.0		41.3	17.1	K	9.5	5	13.4	41.6		9.5		20.9	6.1		9.5		43.3	36.5	
9.5		38.7	58.4		9.5	46	10.8	55.0	B	7.0		29.5	33.3	K	9.5		40.9	33.8	B	9.5		59.0	51.4	
9.5		41.4	13.9		9.4		24.5	48.7		9.3		50.3	17.4		9.5		52.0	34.8		9.5	40	8.0	28.6	
8.8	23	15.2	10.4	K	9.3	47	26.0	37.2		8.5		54.6	51.9	Kb	9.5		52.1	8.9		9.5		34.0	4.0	
8.5	24	25.7	16.0	Kb	8.6		59.9	19.9	K	9.4	6	0.2	14.2	B	8.5		52.9	12.6	K	9.5		41.0	30.3	
9.5		29.8	16.0		9.5	48	49.1	6.6		9.5		29.8	54.0		9.5	26	32.3	18.2		9.5		56.5	49.4	
9.5		39.2	45.7		9.2	49	5.8	54.3	b	9.5		44.9	22.3		9.5		58.9	38.2		8.8		57.5	36.5	K
8.8		53.6	31.0	L	9.4		19.8	27.0		9.5	7	4.9	35.0		9.4	27	5.6	6.6		9.1	41	11.5	46.2	
9.3	25	6.1	30.8	a	9.5		58.4	14.6		9.5		30.7	49.2		8.5		20.9	6.8	K	9.5		27.8	19.6	B
9.3		18.8	57.1	K	9.5	50	3.4	32.2	B	9.5	9	30.9	58.9		9.5		22.4	29.8		9.3		41.8	3.1	b
9.3		39.1	56.4	K	9.5		22.8	18.0		9.5		36.0	24.0		9.5		52.1	21.2		9.5		50.6	49.7	
9.5		39.2	23.6		9.5	51	32.7	19.9		9.1		53.4	13.3	b	9.5	28	18.9	19.9		9.1		55.5	20.6	K
9.5		43.2	18.1		9.3		37.1	27.0		9.5		58.0	10.2		9.5		40.0	17.8		8.6	42	0.0	29.7	K
9.3		59.6	53.5	K	9.5		38.0	11.6		9.5		59.9	51.0		9.1		47.6	31.6	b	7.3		11.5	57.3	B
9.5	26	10.8	6.8		9.5		51.0	36.0	B	9.5	10	15.4	28.1		9.4		55.4	5.4		9.5		14.0	25.2	
9.2		28.1	18.8		9.5	52	2.8	37.9		9.5		26.0	5.4		9.5	29	8.4	23.6	B	9.5		25.5	25.6	
9.5		44.9	3.8		9.5		11.4	20.2		9.5		38.5	7.7		9.5		38.3	31.4		8.5		33.0	33.7	K
9.2	27	38.1	36.5	b	9.1		48.7	53.5		9.0	11	32.1	44.3	K	9.4		59.2	24.9	B	9.5		36.7	30.1	
9.3		51.6	35.1		8.8		58.0	35.1	K	9.3		56.8	4.5		9.3	30	9.2	51.7		9.5	43	1.1	52.6	B
9.0		56.6	14.6	L	9.4	53	20.9	0.4	b	9.5	12	3.8	2.5		9.5		16.4	40.9		9.5		20.8	6.6	
7.2	29	43.7	32.7	K	9.0		50.3	43.5	B	9.5		40.2	25.7	B	9.5		18.4	5.9		9.5	44	2.5	6.1	
8.8		48.2	16.0	K	9.5	54	7.7	46.1		9.4	13	40.0	48.9		9.2		21.5	1.3	b	9.5		7.0	23.8	
8.5	30	22.7	20.6	K	9.5		29.4	27.7		9.3	14	0.6	51.0		9.4		30.9	12.9		9.0		7.7	40.0	L
9.4		32.8	48.7	B	9.5		34.8	12.8		9.5		46.5	34.5	B	9.1		39.4	42.7		9.5	45	9.1	7.5	B
9.4		47.8	51.3	B	9.3		39.4	46.8		9.5	15	27.0	18.5		9.5		48.9	27.8		9.5		9.1	1.6	B
9.5	31	23.4	3.1		9.5		47.0	13.7		7.3		39.7	59.1	K	9.5		54.5	32.3		9.5		27.0	18.6	
9.5		29.7	54.6	B	9.5	55	10.4	15.6		9.5		40.0	18.9		9.2		57.3	57.3		8.7		34.0	22.4	
9.0	33	17.3	7.5	K	9.5		12.6	1.3	B	9.5	16	13.3	2.4	B	9.5	31	11.9	3.4		9.5	46	30.2	3.4	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.61	1.38		10pr.		30.61	1.06		10pr.		30.61	0.82		10pr.		30.60	0.51		10pr.		30.60	0.32	

3575ᵃ				
9.7	39	15.1	8.0	B

17ᵘ — 18ᵘ

+0°

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
17ᵘ—18ᵘ		+0°			18ᵘ		+0°			18ᵘ		+0°			18ᵘ		+0°			18ᵘ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	46	32.0	28.2		9.4	1	34.9	58.6		9.3	13	41.4	39.9		9.1	30	42.5	58.1		9.5	44	34.0	19.1	
9.5		32.8	11.3		9.5		49.2	2.8	B	9.5	14	20.2	57.2		8.4		47.2	16.3		9.2		44.3	42.6	
8.0		33.7	37.2	L	9.3		50.9	22.3		7.9		44.2	5.6	L	9.5	31	6.1	36.3		9.5		52.5	47.6	
8.9		33.7	39.8	B	9.3	2	4.2	51.5	R	8.8		59.4	58.9	K	8.7		14.7	56.1		9.5		53.9	29.8	
8.5		42.0	43.8	Kb	8.0		7.1	22.3	Kb	9.0	15	2.2	13.0		9.0		56.1	12.8		7.8	46	5.0	41.7	Lb
9.4	47	9.3	44.2	B	9.0		19.0	48.4	R	8.1	16	4.6	16.2	K	9.5		59.3	10.6		9.5		33.7	49.3	
8.2		58.2	42.7	K	9.1		23.5	23.7	K	8.8		33.9	44.4	R	9.5		59.8	31.7		9.5		51.3	18.9	
9.5	48	1.9	54.8		9.5		28.1	32.9		8.7		52.3	23.1	B	9.5	32	2.0	32.9		9.5	47	9.4	41.7	
9.5		13.8	8.0		9.5		47.4	33.9		9.5	17	34.3	26.5		8.2		14.9	1.4	K	9.3		26.0	30.7	
8.7		20.5	29.9	Kb	7.9	3	0.5	31.1	K	9.5	18	34.9	48.0		9.5	33	18.1	29.6	B	9.8		30.7	41.4	
9.5		22.5	26.5		9.0		2.4	47.0	R	7.0		41.7	42.6	L	8.2		23.2	54.5	K	7.6		32.9	57.0	K
9.2		54.6	48.6	K	9.1		16.3	32.7	K	9.5		43.2	19.8		9.3	34	3.0	7.2	K	9.2		52.2	27.8	*b*
5.8		55.2	42.7	K	9.1		32.7	28.3	K	9.4		55.1	58.0		7.8		3.0	26.1	K	9.3	48	8.9	37.5	
9.5	49	6.4	52.0		9.4		35.4	50.3		9.1	19	38.2	1.1	R	9.5		25.2	15.3		8.9		22.2	9.4	
9.5		14.7	17.8	B	9.4	4	8.9	18.2		9.5		44.9	54.0		8.7		51.8	1.1	K	7.4		23.0	5.1	L
6.2		38.8	5.5	K	8.8		21.0	5.7		*var*		48.3	6.9	K	9.2	35	1.4	32.2		9.5		56.3	25.2	*a*
9.2		42.0	23.1		9.0		21.0	47.5	R	9.4		53.0	49.6		9.5		1.6	45.3		9.5	49	0.1	57.2	
9.5		44.1	35.8		9.5		31.3	10.9		9.4	20	5.2	58.3		9.4		25.5	31.6		9.5		1.4	15.1	
9.5		53.5	36.2		9.5		40.5	25.2		9.5		6.3	21.8		9.5		27.6	46.1		8.5		4.5	47.3	K
8.7		54.8	13.3	K	9.4	5	44.8	33.7	R	8.1		25.1	7.3	K	9.3		30.3	51.9		9.3		23.0	1.7	
9.5	50	16.0	20.6		9.5		52.7	0.0		9.5		29.2	29.3		9.4		34.7	26.8		8.8		25.8	23.5	K
9.2		17.8	16.5		9.3		57.9	30.8	R	9.5		30.0	10.6		9.5	36	7.0	28.1		9.5		51.2	0.6	
9.5		44.0	13.0		8.1	6	21.2	39.4	L	8.0	21	12.9	43.1	K	9.5		22.6	24.1		9.1	50	8.8	23.6	
9.2	51	3.1	55.9		9.0		28.8	3.4	B	9.5		25.1	59.8		9.5		58.8	45.1		9.2		9.1	15.4	
9.3		36.5	14.4		8.9		35.9	10.0	K	8.9		40.6	21.4	K	8.4	37	9.0	0.9		9.3		30.1	56.1	
9.5		46.5	4.2		9.1		40.7	23.7		9.5		51.1	48.0		9.1		17.1	35.0	Bb	9.3		35.4	30.0	
9.0	52	2.4	34.8	R	8.8		41.6	26.7	K	8.2		52.0	14.0	K	9.5		47.4	39.5		9.5		38.3	12.8	
9.5		4.0	15.1		9.5		48.9	36.8		8.9	22	20.0	13.3	K	9.5		49.3	0.3		9.5		56.0	50.4	
8.7		6.1	2.1	B	9.5		54.2	5.5		9.5		30.7	43.1	B	9.3	38	0.8	1.0		9.5	51	1.3	41.3	
9.5		32.5	54.8		9.2	7	1.0	22.8	K	9.4		43.9	43.4	K	9.5		11.5	27.9		9.5		8.1	36.6	
8.5		50.3	10.5	K	9.5		1.8	38.9		9.2	23	3.8	37.2	K	9.5		40.0	17.9		9.5		14.2	4.4	
7.1		51.8	37.6	L	7.5		8.8	8.7	K	8.5		12.2	17.0	K	9.5		40.8	36.8		9.5		45.4	15.4	
9.3	53	2.2	6.2		9.5		10.2	57.0	B	8.7		31.2	20.3	K	9.3		48.9	9.7		9.3		59.7	43.1	
9.5		24.0	1.9		9.5		10.8	37.0		9.5		53.0	15.1		9.5		51.3	19.3		9.5	52	6.5	24.2	
9.5		38.0	17.8		9.5		30.7	50.2		9.5	24	28.2	6.7		9.2		53.2	46.0		9.5		47.8	42.7	
9.5		40.0	20.0		9.5		50.0	9.8		9.5		31.9	45.5		9.5		54.4	12.9		9.4		52.7	38.1	
8.0	54	6.0	6.7	K	9.5		54.0	0.1		9.5	25	1.0	8.4		9.2	39	2.5	41.8		9.0	53	14.5	50.8	
9.4		43.1	9.7	K	8.5	8	7.2	10.5	K	9.5		5.7	40.8		8.9		6.9	43.2		9.5		21.9	11.7	
9.0		45.4	52.8		9.4		12.1	0.8		9.1		9.1	30.4		9.5		58.2	6.0		9.4		47.4	26.5	
8.2		50.6	6.3	K	9.4		13.4	32.2	B	8.7		16.9	28.9	R	9.5	40	34.7	26.3		9.5	54	3.0	25.4	
9.4	55	25.2	57.4		9.5		28.0	24.4		9.3		31.3	30.0		9.4		44.4	58.7		9.5		19.3	16.3	
9.3		36.1	25.0		9.5	9	3.4	9.9		9.5		40.8	19.0		9.3	41	16.5	29.7		8.7		35.9	28.6	
9.3	56	16.8	21.9		9.5		6.2	56.8		9.5	26	9.9	37.7		8.5		17.3	22.0		9.5		42.4	10.6	
9.5		19.3	8.5		9.5		10.3	0.3		9.4		28.4	5.7	B	9.3		35.2	3.5		9.5		56.6	36.2	
9.5		36.5	11.8		9.5		23.7	28.3		9.3		38.8	5.5	B	9.4		36.8	51.0	B	9.3	55	14.5	15.0	K
9.5		37.2	54.4		9.5		25.0	58.6		9.5		42.1	28.0	B	8.5		37.1	8.5	K	9.5		15.8	49.3	B
9.3		50.3	1.0		6.8		43.6	57.3	K	9.5		48.3	50.2		6.5	42	14.4	40.7	L	9.2		24.4	18.4	K
9.0	57	19.1	51.3		9.5		50.3	17.8		9.5		59.8	0.6		9.0		31.5	22.7		7.5		55.8	22.3	Kb
9.5		32.3	15.4		9.5	10	25.6	58.2		9.5	27	26.2	19.6		9.5		37.8	20.2		9.1	56	8.7	5.8	
9.3	58	0.9	54.7	R	9.3		43.9	48.9	K	9.5		28.8	12.9		9.5	43	0.9	37.5		9.1		21.4	32.8	K
9.5		27.0	55.4		9.5		51.0	28.1		9.1		37.3	34.3	*b*	9.5		18.2	9.1		9.4		35.7	3.8	B
9.5		43.4	21.5		9.5	11	2.0	29.3		9.5	28	19.2	0.4		9.5		23.5	4.6		9.5		38.1	36.0	
9.5	59	16.1	23.3		8.6		17.2	42.1	K	9.4	29	1.2	1.5	B	8.6		36.3	4.9	Kb	9.5		53.0	58.0	
9.2		37.8	2.8		9.5		19.1	16.2		9.5		31.7	13.5		9.5		51.2	54.0		9.5		55.2	5.0	
9.5	0	8.1	30.1		9.5		36.1	1.1	B	6.8		47.4	50.1	K	7.9		52.7	39.9	K	9.5	57	12.0	18.8	
9.5		11.4	26.7		9.5		44.2	54.4		9.1		57.1	3.1		9.3	44	0.6	45.8		8.7		30.9	1.3	K
9.1	1	1.5	5.8	Kb	9.5	12	1.7	40.2		9.5	30	7.5	8.1		9.3		14.2	23.5	*a*	9.5		53.8	38.6	
9.5		8.8	0.4		7.9		3.6	47.4	Kb	8.9		12.2	43.1	R	9.3		14.4	2.9		9.5		55.0	21.9	*B*
8.5		14.1	42.0	L	9.5		28.8	7.4		8.9		33.1	46.7		9.0		18.5	22.8	B	9.3	58	5.9	0.4	
9.5		28.4	4.3		9.4		41.7	44.9	B	9.5		40.7	47.5		9.5		18.9	4.3		9.5		7.3	10.6	
		+	−				+	+				+	+				+	+				+	+	
10pr.		*30.60*	*0.10*		*10pr.*		*30.60*	*0.10*		*10pr.*		*30.60*	*0.33*		*10pr.*		*30.60*	*0.56*		*10pr.*		*30.61*	*0.74*	

4101 — 4160

	18°—19°	+0°	
m	′ ″	′	
9.5	58 50.0	42.8	
9.5	59 20.1	52.4	
9.3	28.8	30.3	Kb
9.5	35.6	39.5	
9.4	39.0	7.0	
7.0	46.0	25.9	K
9.5	50.8	41.0	
9.5	51.8	43.2	
9.4	52.9	49.0	
9.4	0 24.4	57.0	B
9.3	27.4	47.3	B
9.2	43.6	2.7	b
9.5	1 24.5	6.0	
9.5	27.1	50.9	
9.5	27.4	40.7	
9.5	55.2	47.1	
9.4	2 4.5	19.2	B
9.0	15.5	41.9	
9.4	31.4	46.6	B
9.3	32.7	3.9	
9.5	37.3	44.5	
7.8	45.5	42.6	K
9.1	3 5.7	45.7	K
8.8	9.9	27.8	
9.5	48.2	48.5	
8.9	56.8	29.4	K
9.5	4 1.2	29.2	B
9.5	1.8	33.0	B
9.4	29.5	32.5	B
9.4	38.2	56.0	B
9.5	38.4	40.2	
9.5	41.0	5.8	
8.9	42.5	40.6	K
9.4	51.1	57.5	
9.5	5 3.2	5.2	B
9.5	36.4	14.3	
9.5	36.6	26.6	
9.5	41.9	22.6	
9.5	51.2	18.8	K
9.5	6 4.6	40.0	
9.5	7.6	37.5	B
9.5	23.5	34.0	
9.5	27.4	46.4	
9.5	30.4	14.6	
9.3	30.9	14.9	
9.3	53.8	28.0	
9.2	56.0	3.0	K
9.3	56.7	0.8	K
9.1	7 3.0	38.5	K
9.5	40.1	21.0	
9.3	57.7	34.7	
9.5	8 28.0	25.5	
9.5	9 0.4	14.5	
9.5	8.5	30.7	
9.5	9.5	30.8	
9.5	39.3	45.2	
7.8	42.2	39.4	K
7.5	46.9	14.7	K
8.2	52.5	48.6	K
9.0	10 2.5	59.6	K
	+	+	
Npr.	30.61	0.94	

4161 — 4220

	19°	+0°	
m	′ ″	′	
9.5	10 11.5	9.1	
9.4	16.0	56.4	B
9.5	18.0	16.7	
9.1	22.3	21.6	K
9.3	57.1	29.3	B
7.0	11 6.7	10.2	K
9.3	7.7	29.4	B
5.0	10.2	49.8	K
9.3	13.1	13.3	B
7.0	26.0	4.9	K
9.5	28.9	28.8	
9.0	35.7	43.6	K
8.8	36.4	15.2	
9.5	12 34.0	25.9	
9.0	56.2	40.1	
9.4	56.6	17.0	
8.9	13 3.8	57.4	Kb
8.8	10.8	23.4	
9.4	22.5	31.7	
7.8	32.7	38.5	K
9.5	56.4	43.3	
7.7	14 11.3	20.4	K
9.5	32.0	53.3	
9.5	32.3	21.5	B
9.5	54.3	29.5	
7.5	55.0	0.7	K
9.0	58.2	20.5	
9.1	15 7.6	44.6	b
8.8	7.7	25.8	
9.5	31.5	43.3	
9.5	41.7	44.6	
9.5	54.5	9.7	
9.4	16 5.2	59.3	
9.3	24.1	25.2	
9.3	33.1	3.3	
9.5	17 9.5	43.7	
9.5	34.0	4.8	
9.5	35.4	46.0	
9.5	56.2	14.0	B
9.3	18 21.9	17.0	
9.5	29.4	59.9	B
9.2	38.6	11.6	
9.4	49.5	38.1	
9.2	53.7	4.2	K
9.5	19 4.0	15.2	
5.0	6.8	3.2	K
9.3	12.4	23.8	
9.4	58.5	55.6	
9.5	59.0	49.2	
9.5	20 7.1	7.8	
9.5	23.0	49.4	
9.2	37.6	12.4	
9.5	47.9	4.2	
9.5	52.1	11.4	
8.5	21 3.7	6.7	B
9.5	8.1	38.1	
9.4	11.0	14.3	
9.5	13.6	0.6	
9.1	16.5	34.0	b
9.5	22 2.1	57.8	
	+	+	
Npr.	30.61	1.09	

4221 — 4280

	19°	+0°	
m	′ ″	′	
9.5	22 5.0	13.9	
9.5	15.3	24.2	
9.3	19.0	59.5	
9.4	31.3	5.1	
9.5	34.2	12.9	B
9.1	42.5	46.2	
9.5	43.3	15.0	
9.0	43.4	56.8	
8.4	51.3	2.1	B
9.5	51.4	10.8	
9.3	53.0	44.6	
9.3	23 13.7	33.9	
9.4	16.6	48.1	B
9.5	27.6	44.7	
9.5	56.8	46.1	
9.0	24 25.7	13.5	
9.5	53.8	36.9	
9.2	57.7	57.7	aB
9.5	25 5.7	57.6	aB
9.5	10.0	29.0	
9.5	12.0	16.7	
9.2	56.3	4.8	
8.9	57.2	7.5	
9.5	26 12.0	10.0	
9.5	49.1	12.2	
9.4	53.1	6.7	
9.3	53.9	11.0	
8.3	55.8	2.4	L
9.1	27 29.2	56.6	b
9.5	31.3	37.0	B
8.9	34.8	19.1	
9.5	52.9	13.7	
9.5	28 25.8	19.1	
8.6	40.9	20.2	K
9.5	29 2.8	23.3	
9.5	14.0	0.3	
9.5	23.8	11.2	
9.5	38.2	30.7	
9.1	40.3	18.7	
9.5	30 17.6	6.5	
9.5	24.9	55.9	
9.5	28.6	6.7	
9.5	34.5	33.2	
9.3	36.5	27.6	
7.0	57.0	1.4	K
8.3	31 23.6	16.9	K
9.5	46.4	13.0	
9.5	49.9	15.9	B
9.5	33 15.7	29.5	
8.0	33.9	22.2	B
9.5	56.8	11.8	
9.5	34 17.7	59.4	B
9.4	19.2	16.7	
9.1	23.8	4.4	b
8.7	36.8	51.0	K
8.9	38.5	42.7	
9.5	38.5	19.6	
8.3	43.6	48.5	K
9.4	50.2	9.4	B
9.5	51.0	13.7	
	+	+	
Npr.	30.61	1.25	

4281 — 4340

	19°	+0°	
m	′ ″	′	
9.5	35 9.0	17.0	
9.4	26.5	47.5	B
8.8	30.6	54.4	K
9.3	31.5	54.5	a
9.5	34.3	49.5	
9.2	41.0	55.3	aB
9.3	46.0	56.2	a
9.3	50.4	57.0	a
9.4	51.0	39.7	B
8.1	36 6.3	20.5	L
9.0	28.9	28.6	B
8.3	30.8	51.1	K
9.3	32.1	2.8	
9.5	37 0.1	16.7	
9.5	5.0	15.3	
9.5	7.6	3.8	
9.5	12.8	21.0	
9.1	13.2	7.8	B
9.5	33.7	35.3	
9.5	33.8	29.3	
8.7	36.2	53.3	K
8.3	40.9	24.9	K
9.5	59.5	23.8	
9.5	38 32.1	18.5	
9.5	39 8.4	22.9	
9.5	29.0	15.3	
9.5	41.4	47.0	
9.5	52.2	51.8	
9.5	54.0	55.0	
9.5	40 2.1	7.1	
9.5	3.7	41.2	B
9.4	9.6	26.6	
9.5	11.4	0.6	
7.0	11.6	44.8	Kb
9.5	16.5	43.9	B
9.5	36.3	22.4	
9.1	43.2	33.8	
9.5	41 0.0	1.1	
9.5	7.1	15.4	B
8.9	41.7	38.1	Kb
9.5	48.2	20.6	
9.5	58.0	2.5	
9.4	42 31.7	7.6	B
9.2	32.7	19.8	
9.2	38.6	6.3	
8.9	52.3	5.8	K
9.5	59.0	33.0	
9.5	43 4.7	32.3	
8.6	13.5	21.8	K
9.0	28.3	56.2	K
7.3	31.9	29.1	K
9.3	44 4.4	6.3	
9.5	18.0	32.7	
9.5	24.8	44.9	
9.5	25.6	37.8	
9.2	58.0	35.5	K
9.5	45 5.2	38.2	K
8.4	8.3	17.0	L
9.5	25.5	28.5	
9.3	46 6.5	38.5	
	+	+	
Npr.	30.61	1.41	

4341 — 4400

	19°	+0°	
m	′ ″	′	
9.3	46 7.2	33.1	
9.5	26.5	56.8	
8.5	33.7	49.3	K
9.5	37.1	12.2	
9.3	48.9	55.5	
9.5	52.4	48.1	
9.5	47 43.5	32.5	
9.5	46.0	38.4	
9.5	58.5	44.7	
9.5	59.2	16.3	
8.6	48 7.2	12.6	L
9.5	21.1	50.2	
9.5	28.3	20.9	
9.2	54.4	3.1	
9.3	56.0	40.5	
9.2	49 3.5	36.6	
9.5	7.4	58.8	
9.5	7.4	36.3	
9.3	8.0	26.3	B
9.5	9.0	14.4	
9.2	12.2	59.9	
8.7	21.0	6.1	K
9.5	56.1	10.2	
9.5	50 11.0	38.3	
9.3	11.6	28.1	
9.5	23.1	0.5	
8.8	36.5	7.4	Kb
9.0	51 2.9	22.8	
9.2	12.2	43.3	
9.1	25.9	8.3	K
9.3	30.8	19.2	B
9.1	31.9	30.5	
9.3	32.3	43.2	
9.1	41.1	16.9	K
6.7	52 0.8	59.5	Kb
9.3	14.2	24.6	
9.5	15.9	10.2	
9.5	19.6	28.3	
8.6	32.2	15.6	K
9.5	48.6	39.4	
9.0	53 0.2	39.5	
8.5	15.7	57.9	K
9.5	29.9	4.0	
9.1	51.0	32.2	
8.6	51.0	56.3	
8.8	54 7.2	15.9	
9.3	22.1	49.4	
9.5	25.3	10.2	
8.9	26.3	46.2	
8.8	45.1	45.9	
9.5	57.8	15.9	
9.5	55 6.0	6.4	
9.3	9.5	32.3	
9.5	15.3	3.6	
9.1	24.0	48.8	
9.5	24.9	42.5	
9.5	27.1	21.7	B
9.5	36.7	21.7	B
8.4	49.1	17.7	K
8.8	56 12.6	57.6	
	+	+	
Npr.	30.62	1.55	

4350°			
9.3	7	49.9	46.9

4401—4460

	19ᵉ—20ᵉ	+0°	
m	′ ″	′	
9.0	56 20.0	51.8	
9.0	21.6	0.3	
8.8	23.2	28.2	
9.5	38.1	21.0	
9.4	49.6	21.5	
9.5	57 8.7	28.8	
9.1	18.5	9.7	
7.6	24.3	45.0	K
9.5	30.9	49.0	
9.5	48.8	27.8	B
7.0	55.9	2.7	K
9.5	58 36.4	37.1	
9.5	38.7	48.9	
9.3	59 13.5	39.2	
9.5	17.1	13.0	B
9.2	21.0	56.5	b
9.5	23.4	21.7	B
9.3	30.1	16.0	
8.9	33.6	28.2	B
9.0	52.0	11.3	
9.5	56.1	55.0	
9.5	57.0	11.6	
9.3	57.3	59.8	
9.5	0 11.3	45.4	
9.3	11.4	59.9	
9.5	19.4	41.9	
9.0	50.6	14.7	
9.4	51.3	26.5	
9.5	1 0.3	43.6	
9.5	7.7	47.9	
9.5	32.7	27.6	
9.5	45.0	58.4	B
9.5	50.3	42.5	
8.6	51.2	33.3	
9.5	2 24.2	1.6	
9.5	57.0	6.1	
9.5	3 8.0	22.1	
9.0	33.5	12.4	
9.4	43.6	10.0	
8.0	46.3	7.3	
8.4	4 7.1	39.1	
9.3	7.4	59.8	
9.5	59.7	56.3	
6.9	5 12.5	26.3	K
8.8	51.7	35.1	K
9.4	6 3.2	37.0	
9.1	12.2	54.1	
8.3	50.6	17.7	Kb
9.5	53.0	52.1	aB
9.3	55.2	58.3	
9.1	7 1.3	28.9	
9.5	46.6	29.4	
8.8	57.6	15.4	
9.4	8 6.7	4.3	
8.8	12.8	40.9	
9.5	29.1	22.5	
9.5	29.6	32.8	
9.3	34.4	40.5	
9.2	46.4	6.3	
8.5	55.9	23.6	K
	+	+	
10 pr.	30.62	1.68	

4461—4520

	20ᵉ	+0°	
m	′ ″	′	
9.4	9 7.8	4.4	
9.0	12.1	29.3	
9.5	18.4	54.2	
8.8	21.4	44.0	
9.2	39.0	2.8	K
9.4	39.4	18.7	
9.5	46.4	14.8	
8.5	55.5	52.2	K
9.5	10 7.4	10.8	
9.5	11.2	30.9	
9.4	31.5	29.8	B
9.5	40.0	38.3	
9.5	58.5	36.6	B
9.8	11 9.0	17.1	B
7.5	13.3	11.2	K
9.0	15.8	17.1	K
8.9	33.8	8.5	K
9.3	12 14.6	14.6	
8.5	15.1	25.6	K
9.3	43.6	41.5	
9.2	47.9	11.6	B
8.1	49.8	17.2	K
8.2	13 21.2	56.2	K
9.5	47.3	28.2	
9.4	50.1	58.2	
9.2	14 1.2	24.2	
8.4	6.4	6.4	Lb
8.5	39.1	23.3	L
9.2	15 3.0	31.5	
9.3	16 9.1	10.1	
8.2	28.1	3.4	K
9.3	30.4	28.6	
9.4	51.1	59.6	B
9.5	17 7.2	28.7	
6.5	15.2	36.1	L
6.9	19.6	54.2	Lb
9.4	18 22.8	29.4	B
9.5	24.0	6.0	
9.5	24.3	1.8	
8.8	26.2	30.1	B
9.0	27.9	48.9	
9.5	42.3	36.5	B
9.3	45.2	10.5	
9.3	54.4	54.3	
9.0	19 19.2	34.9	
9.5	20.0	42.4	
9.5	20 2.4	27.0	B
8.6	2.7	22.8	L
9.1	3.6	53.3	
9.5	11.5	27.1	B
9.5	20.7	23.4	
9.5	58.2	29.6	
9.4	21 1.4	5.0	
9.3	9.9	44.3	
7.5	13.1	24.3	K
9.4	30.0	51.8	
9.5	58.6	6.7	
8.9	22 52.1	7.3	B
9.0	57.5	9.2	
9.0	23 3.5	2.7	
	+	+	
10 pr.	30.62	1.87	

4521—4580

	20ᵉ	+0°	
m	′ ″	′	
9.5	23 11.3	31.1	
9.2	17.6	12.7	
9.1	22.7	37.3	b
8.8	59.7	18.1	B
9.0	24 12.2	17.3	B
9.2	25.5	57.3	
9.0	36.7	53.0	
9.2	40.9	54.4	a
9.1	51.8	8.6	
9.5	53.6	44.3	B
9.3	59.8	3.0	
9.0	25 0.6	29.7	K
9.5	15.3	33.1	
8.8	36.0	7.2	
9.3	26 1.4	29.2	
8.1	14.9	46.5	K
9.1	15.1	15.2	
9.5	26.2	20.2	
9.3	49.0	47.5	K
9.5	27 24.7	51.9	
9.5	27.6	11.0	
8.5	31.4	9.9	B
9.2	46.4	51.2	
9.0	47.1	57.5	
9.1	28 8.0	14.1	B
9.3	13.5	14.5	B
9.5	42.7	30.6	
9.3	29 5.4	43.2	
9.0	7.1	13.4	
8.5	30.7	26.7	
9.0	31.8	49.9	B
9.3	42.3	50.8	
9.5	46.6	44.1	B
9.3	30 19.5	34.8	
9.3	29.1	53.7	
9.4	35.2	41.8	
9.0	47.2	25.6	B
8.3	53.1	30.6	K
9.5	31 6.9	53.3	
9.4	17.5	50.4	
7.9	39.6	41.6	K
9.4	32 8.8	41.2	
8.8	22.3	32.9	K
9.0	30.5	33.5	K
8.8	40.2	48.3	K
8.8	53.4	10.1	
9.4	33 8.2	27.6	B
9.2	21.3	16.0	
8.5	22.8	26.6	K
9.4	34 0.4	34.4	
9.3	2.4	32.2	B
9.4	27.8	43.9	B
9.5	41.0	35.0	
8.8	35 11.1	45.7	
9.5	17.7	41.0	
9.3	50.5	14.3	
9.4	36 36.7	10.9	B
9.3	39.6	12.9	B
9.2	47.8	24.0	b
9.2	37 45.2	16.7	
	+	+	
10 pr.	30.63	2.03	

4581—4640

	20ᵉ	+0°	
m	′ ″	′	
8.8	37 51.4	48.9	
9.3	55.3	8.5	
9.5	58.1	31.9	
9.3	38 50.0	27.3	
9.2	39 1.4	9.7	b
9.4	1.7	42.9	B
9.5	40 29.2	4.3	
8.5	41 14.1	43.4	
8.0	20.6	59.6	K
8.8	25.3	9.5	
*9.5	40.6	28.2	
*9.5	42 58.6	58.6	
9.5	43 27.7	34.6	
9.2	27.9	28.8	
9.1	55.5	25.7	
9.4	44 1.0	58.8	aB
8.7	2.4	47.3	Kb
9.4	11.1	59.4	aB
9.5	13.9	21.2	
8.7	19.5	35.7	K
9.4	42.4	6.7	
8.5	46.0	46.4	
8.8	45 22.5	47.5	
9.5	39.2	24.7	
9.2	54.5	51.3	
9.5	59.2	26.8	
8.8	46 12.2	33.0	
9.5	34.7	26.7	
9.8	35.7	43.3	
8.7	36.8	52.6	K
9.2	47 8.0	7.1	b
9.5	19.9	23.0	B
9.5	22.0	4.4	
9.5	55.2	30.1	
9.3	48 32.0	41.2	B
9.5	49 4.2	46.1	
9.5	6.0	37.9	
8.8	15.7	15.6	
9.3	23.5	29.5	
9.0	55.9	51.5	
8.7	50 5.1	3.2	Lb
9.4	5.9	2.3	
9.5	6.8	32.2	
9.5	15.0	42.1	B
8.8	15.0	26.2	
9.5	33.0	44.3	
9.5	53.1	48.2	
9.3	51 0.8	44.7	
9.3	53.4	13.3	B
9.2	54.5	7.5	B
9.5	52 0.6	41.1	
8.7	5.1	33.1	K
8.7	8.1	30.1	K
8.5	9.6	17.2	K
9.3	18.9	16.2	
9.4	19.1	28.0	a
9.5	20.5	13.9	B
9.0	53 22.1	33.1	K
7.9	41.1	29.3	K
9.3	45.0	29.9	K
	+	+	
10 pr.	30.63	2.22	

4641—4700

	20ᵉ—21	+0°	
m	′ ″	′	
8.0	53 59.8	30.7	K
8.5	54 11.6	57.1	Lb
9.5	34.4	45.3	
8.6	55 7.0	4.1	B
9.5	18.2	42.6	
9.5	22.5	8.3	
8.7	28.1	48.6	K
7.7	42.8	58.0	K
9.5	47.0	44.5	
9.5	51.4	36.6	B
9.5	56 8.1	45.0	
9.5	29.6	24.8	
9.2	30.1	32.1	b
9.5	30.7	2.5	
9.5	57 9.2	21.1	
9.4	11.8	30.6	B
8.3	55.3	8.8	K
8.7	58 26.3	5.0	K
9.5	51.0	14.6	
9.0	59 24.6	22.0	K
8.8	49.1	53.3	B
9.4	50.2	28.6	B
8.0	0 26.6	35.5	K
8.7	31.7	55.9	B
9.3	47.8	57.0	B
9.3	48.1	54.6	
9.3	1 8.3	59.9	
9.5	9.1	22.4	
9.5	15.9	39.4	
9.5	39.1	41.1	
9.5	2 8.0	53.5	aB
8.7	9.3	59.4	Lb
9.5	22.6	32.8	
9.0	44.1	42.9	
9.5	3 12.4	12.5	
9.0	14.1	34.2	L
9.3	35.4	2.4	B
9.2	39.1	26.2	
8.4	4 14.8	4.6	Kb
9.5	38.7	10.7	
9.0	5 12.3	18.4	L
9.5	34.3	58.6	
9.5	6 1.3	51.1	
9.3	28.1	6.7	
9.5	36.3	5.3	
9.0	7 0.6	46.0	K
9.5	14.8	30.7	
9.5	16.1	33.1	
9.2	18.3	54.8	K
9.5	27.6	12.3	
9.0	54.3	29.3	
9.3	8 11.6	51.1	
9.5	19.1	29.0	
9.3	9 1.9	54.3	
9.5	27.1	54.1	
9.0	28.6	34.2	K
8.3	35.1	25.5	K
9.0	59.6	58.5	
9.5	10 18.0	18.8	
9.0	33.4	53.2	
	+	+	
10 pr.	30.64	2.38	

11ᵉ
9.5 | 58 3.9 | 49.0

4591ᵉ
9.5 | 42 23.3 | 43.9

4701 — 4760					4761 — 4820					4821 — 4880					4881 — 4940					4941 — 5000				
	21ᵃ		+0°			21ᵃ		+0°			21ᵃ—22ᵃ		+0°			22ᵃ		+0°			22ᵃ—23ᵃ		+0°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.5	10	53.6	36.3	K	9.5	33	3.7	43.9		9.2	58	43.9	17.7		9.3	22	14.1	32.8		9.3	48	23.2	34.7	B
9.5	11	20.8	41.4		9.2		12.5	33.6	K	9.2	59	47.2	43.0		9.5		26.8	54.2		9.2		27.7	34.9	B
9.5		30.0	21.5		9.3		15.2	3.0		9.5	0	6.5	11.5		9.5		46.8	2.9		9.5		42.3	3.7	
9.3		32.9	4.6		9.4		39.0	37.8	B	9.5		21.2	44.9		9.0		56.0	25.0		9.4		47.6	13.6	B
9.2	12	40.8	14.7	Kb	8.5		44.2	39.8	K	9.2		41.1	35.7	b	9.0		56.5	3.5		9.5		49.5	30.5	
9.5		49.0	22.2		9.5	34	1.7	0.7		9.2	1	9.4	6.5		8.8	23	22.0	59.0		8.8	49	16.6	40.8	K
9.5	13	3.6	15.8		9.5		25.7	1.4		9.5		32.9	54.7		9.5	24	8.0	17.8		8.5		26.2	7.1	K
8.8		9.1	39.0		9.4		40.2	25.0		9.1		44.4	53.6		9.5		19.5	26.3		9.0		29.6	50.2	K
9.5		10.7	35.0	α	9.5		48.0	10.4		8.7		59.5	54.5	K	9.5		52.3	16.2		9.5	50	47.3	37.8	
9.5		13.0	57.0		5.8		48.0	38.0	K	9.3	2	10.5	24.0	B	8.1	25	9.2	50.2	K	6.0	52	2.7	11.7	K
8.3		38.2	4.6	K	9.3		57.8	1.2		9.3		32.2	15.9		8.8		14.7	45.2	K	9.5		52.3	28.4	
9.5		42.1	29.7		9.5	35	50.0	47.3		9.5		52.4	56.0		8.2		17.2	21.8	L	9.3	53	20.5	59.0	
9.5	14	16.9	58.2		9.5	37	0.7	14.4		9.5	3	26.7	11.4		9.5		37.6	9.5		9.5		22.0	2.8	
7.3		28.3	45.6	K	9.5		31.1	55.4		9.5		51.9	38.2		8.7	26	15.8	26.9	K	9.0		24.3	28.9	
9.5	15	23.5	26.5	B	9.0	38	5.7	1.3		9.5	4	47.5	9.4	B	9.3	27	28.8	53.2		8.5		52.2	18.5	
9.3		40.0	13.0	B	8.8		19.4	59.4	Kb	8.3	5	20.4	28.4	L	9.5	28	5.9	51.6	B	9.0	54	27.9	36.1	R
9.5	16	4.0	13.5	B	9.5		26.6	4.6	B	8.1	6	25.4	9.5	K	9.3		23.5	34.0		8.8		53.5	29.3	Kb
9.2		21.5	6.5		9.0		43.2	35.2		8.2		26.2	53.5	Kb	9.0		51.8	19.7		9.3	55	44.0	41.9	
9.4		30.6	43.0	B	7.7	39	29.7	11.6	Kb	9.5	7	38.2	6.5		9.5		58.9	54.3		9.5	56	23.3	38.2	
8.5		50.1	1.2	K	9.5	40	51.0	14.0		9.5		56.3	56.9	B	9.3	30	22.0	47.9		9.5		31.8	9.4	
9.5	17	27.1	29.7		9.5	42	0.5	22.0		9.2		58.7	53.4		* 8.8	31	10.3	23.0	K	8.2	57	8.5	49.7	L
8.8		59.3	42.9		9.3		20.0	48.4	B	8.8	8	13.2	16.1	K	9.3		12.1	27.4		9.3		11.9	15.3	K
9.5	18	22.0	14.5		9.5		41.5	17.4		9.3		59.4	41.3		9.3		36.1	54.4		7.2		53.1	31.9	K
9.5		24.7	5.0		8.2	43	8.8	4.4	K	9.0	9	37.7	24.6		8.5	32	21.5	17.2	K	8.5	58	0.2	59.4	Kb
9.5		53.7	37.0		8.7		35.8	5.5	K	9.2	10	23.7	49.1		8.3		36.1	27.4	K	9.1		1.5	21.5	
6.8	19	4.7	29.3	Kb	9.5		45.7	51.7		9.5		24.7	2.0		9.0	33	25.6	55.3	B	9.2		12.4	43.5	
9.5		11.5	11.0		7.8	44	9.8	5.1	K	9.2		41.2	42.6		9.3		36.5	7.0		9.5	59	3.7	38.0	
8.5		53.0	2.6	L	8.8		12.2	10.4	K	8.8		44.3	54.8		9.5		38.8	49.2		9.5	1	1.7	26.4	
9.0	20	1.5	25.5	K	9.5		16.0	3.7		9.2		49.0	39.0	b	9.5		46.2	17.5		9.5		21.4	4.4	
9.4		44.2	9.5	B	8.5		48.2	44.9	K	8.5	11	6.1	8.5	K	9.5	34	43.4	31.2		9.3	2	12.6	46.2	
9.1		50.0	3.4		9.5	45	43.2	26.8		9.3	12	12.2	41.8		8.4		58.1	1.0	K	9.5		55.6	16.0	
8.5	21	59.5	31.3	K	9.3		46.5	24.2		9.3		12.2	46.7		7.5	35	35.0	27.1	B	9.5		56.2	23.2	
9.4	22	1.7	28.6	B	9.5	46	3.2	16.2		9.2		15.1	41.3		9.3	36	10.0	3.2		9.5	3	38.1	31.6	R
9.5		5.3	32.0		9.5		46.0	6.4		9.5		34.3	0.6		9.5		25.6	57.5	B	9.5		48.6	50.8	
9.5		9.0	44.0	B	9.2		55.0	7.4		9.2		54.8	50.2	b	9.2		26.3	30.0		9.5	4	16.9	49.5	
8.8		29.4	58.2	Kb	9.0	47	17.2	34.1	K	9.3	13	14.4	58.7	B	9.5		48.8	0.3		9.1	5	30.0	16.0	
9.0	23	33.2	23.7	K	9.5		22.0	47.9		8.5		41.6	19.6	L	8.7		55.4	23.6		9.1		40.4	53.2	
9.5	24	5.0	43.9		9.0	48	20.0	31.0	K	8.9		49.9	29.6	B	8.9	37	4.2	55.8	K	8.2	6	2.9	9.1	K
9.5		12.5	37.0		9.5	49	15.5	25.8		9.3	14	0.4	44.8		9.5		33.3	53.6	K	9.1		10.6	4.0	
8.8		35.2	43.2	Kb	9.5		46.5	21.7		9.4		9.0	32.1	B	8.7		58.2	35.1	K	9.3		55.2	26.3	R
8.8		45.8	5.7	B	9.3	51	21.2	8.3		9.1		37.3	3.3	K	7.8	38	0.9	59.6	Kb	9.4	8	10.8	57.8	
9.5		54.7	35.2		9.5		45.7	34.8		9.0		39.3	1.3	K	9.3		55.4	53.9		7.7		13.6	31.4	K
8.8	25	7.0	22.3		9.5	52	9.4	53.7		9.3		45.8	49.5		8.7	39	59.4	23.0	Kb	9.5	9	29.0	43.7	
9.5		32.0	22.3		9.5		22.0	9.0		9.3		46.3	54.7		8.8	40	32.8	22.7		8.8		41.0	26.7	K
9.3		39.2	10.5		9.2		33.7	37.7		8.9	15	19.6	5.3	K	8.8		36.7	6.3		9.4	10	40.5	5.2	
8.3		57.2	27.2	K	8.5		36.0	13.7	K	9.3		45.1	26.2		8.5		41.2	34.9	K	9.4	11	28.6	27.5	B
9.0	26	15.0	57.6	Lb	8.8	53	5.2	31.3	K	9.3		50.1	33.4		9.3	41	17.6	10.2		9.5		34.0	34.0	B
9.0		40.2	43.1	L	9.5		6.2	37.0	K	8.8	16	13.5	14.0		9.5	42	56.6	25.8		9.4		57.8	55.1	
9.5	27	18.0	5.2		9.2		11.6	56.1	b	9.3		32.3	41.5	B	9.3	43	25.1	36.3	B	9.5	13	7.4	32.8	
7.3	28	0.4	20.0	K	9.1	54	50.5	42.8	B	9.3	17	0.4	27.4		9.3		27.9	6.2		9.5		31.4	4.1	
8.7		30.7	1.9		9.3	55	10.5	45.8		* 9.3		4.6	5.9		9.4	44	9.3	3.9		9.5	15	1.4	48.5	
9.3	29	3.0	55.2		9.3	56	0.7	39.0		* 4.5		53.1	38.3	K	9.3		11.5	41.5		9.4		8.0	57.2	b
9.3		16.5	50.8		9.5		21.0	16.7		9.3	19	7.0	37.1		9.3	45	5.1	49.0		9.5	16	6.4	16.9	
9.3		47.2	16.1		9.5	57	10.7	9.5		9.5		44.7	30.2		9.3		10.5	54.6	B	9.5	18	12.7	52.7	
9.2	30	8.0	58.9	b	9.5		14.2	25.8		9.2	20	8.8	27.2		9.2		44.2	36.0		9.5		27.3	25.8	
9.5		8.7	48.0		9.2		48.8	54.4	K	8.6		25.3	53.3	K	9.2		45.1	28.0		9.2	19	11.6	25.7	
8.8		14.2	36.6		9.5	58	4.6	11.0		9.2		52.0	14.8		9.3		57.5	2.5		8.9		22.5	53.9	K
9.5		28.0	11.6		8.4		17.6	6.3	B	9.2	21	29.4	35.3	Bb	9.3	47	6.4	3.0		5.7		30.3	28.0	K
9.3	31	50.3	53.9		9.0		37.1	32.6		9.3		36.3	32.5		6.8		34.8	17.2	Kb	7.2		49.7	18.7	K
8.8	32	43.4	31.0	K	8.4		37.7	40.8		9.3		37.3	33.6		9.4		42.0	29.7	B	9.3	20	16.4	51.8	
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.64	2.57		10pr.		30.65	2.78		10pr.		30.67	2.97		10pr.		30.68	3.11		10pr.		30.69	3.24	

4871ᵐ			
9.5	17	28.3	30.9

4900ᵐ			
9.5	30	55.6	20.4

5001—5018					5019—5036				5037—5053				5054—5070				5071—5087			
	23ʰ		+0°			23ʰ		+0°		23ʰ		+0°		23ʰ		+0°		23ʰ		+0°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
9.5	20	51.3	35.0		9.1	28	5.8	10.1	*b*	4.6	34	39.6	59.1	K	6.5	42	2.4	15.9	K	8.7	49	7.0	26.4	K
9.5	21	25.4	1.9		9.5		42.3	27.3		9.1	35	48.7	18.5	Kb	9.5		33.2	38.7		9.5	50	42.0	10.7	
8.8		32.9	27.9	K	9.3	29	36.5	36.5		8.9		49.7	6.2		9.3	43	1.5	49.3		9.5		46.6	7.9	
9.4	22	7.1	17.0		9.5		38.9	53.1		9.5	36	48.5	26.0		9.1		7.7	54.5	*b*	9.5		54.3	46.3	
9.0		10.0	17.9	Kb	9.5	30	4.8	49.3		9.5	37	8.0	4.2	B	9.5		27.1	12.6		9.5	51	13.7	57.0	
9.5		15.6	5.6		9.2	31	14.9	46.6		8.6	38	22.6	51.7	Kb	9.1		39.6	46.2		9.5	52	4.6	4.2	
9.4		16.6	50.0		9.5		19.6	27.3		9.3		25.9	12.0	*R*	9.5		53.6	16.1		9.0		33.9	16.6	K
8.5		30.5	21.7	K	9.5		21.4	12.5		9.5		29.2	54.4		9.5		56.6	4.4		9.1		40.0	31.4	*b*
7.7	23	15.7	4.5	K	9.1		45.6	10.0	*Rb*	9.5		45.0	20.8		9.5	44	0.6	45.2		9.1		45.9	57.9	
9.5		32.2	12.7	*B*	9.2	32	11.7	42.2		9.5	39	5.8	16.5		9.2		40.1	41.7	K	8.8	53	8.1	15.0	K
9.2	24	15.5	55.7	*Rb*	9.0		35.5	43.7		9.5		38.0	55.6		8.3		51.8	41.6	K	9.5	54	22.8	46.8	
9.0		20.4	25.6	K	9.5		42.9	50.3		9.2		50.1	20.6	*aR*	9.2	45	6.1	15.8	*b*	9.0	56	14.0	46.8	B
9.5	25	4.5	0.2		9.5		51.6	2.2		9.2	40	3.1	22.1	K	8.6	46	7.0	53.2		9.5		53.0	4.1	
9.5	26	14.6	12.4		9.5	33	15.6	24.7		9.3		9.7	3.0		9.5	47	16.6	11.8		8.3	57	20.3	43.6	Kb
9.0	27	7.5	25.1	K	9.4		29.2	50.3		9.5		16.2	57.4		9.2	48	28.0	18.8		8.8		36.6	13.7	*B*
9.5		25.0	7.8		9.4	34	2.4	21.7		8.9	41	15.8	11.8	K	9.0		40.2	45.1		9.5	59	45.0	13.4	*a*
9.3		33.4	47.8		9.5		32.3	32.9		9.3		40.5	0.9	*R*	9.3		54.0	2.3		8.9		54.4	51.1	
7.2	28	4.5	31.2	K	9.5		37.6	8.6																
		+	+				+	+		10 *pr.*		+	+		10 *pr.*		+	+		10 *pr.*		+	+	
0 *pr.*		30.70	3.30		10 *pr.*		30.71	3.31				30.71	3.33				30.71	3.33				30.72	3.34	

Zone + 1°

1—20					21—40				41—60					61—80				81—100			
	0ʰ		+1°			0ʰ		+1°		0ʰ		+1°			0ʰ		+1°		0ʰ		+1°	
m	′	″	′		m	′	″	′	m	′	″	′		m	′	″	′	m	′	″	′	
9.5	0	6.3	20.8		9.5	7	9.6	4.7	9.3	12	42.3	11.0		9.5	19	8.8	33.7	8.8	25	15.9	21.1	K
9.5		37.3	38.1		9.5		23.5	46.6	9.3	13	4.3	33.4		9.3		32.8	40.6	*b* 9.5		32.8	23.0	
9.5		59.0	41.6		9.5		28.6	29.9	9.5		45.8	22.2		9.5		41.7	56.2	9.5		49.2	25.5	
9.5	1	52.6	38.8		9.5		37.8	49.8	9.4		52.0	3.7		9.3		51.8	21.4	B 9.5	26	31.2	12.9	
9.5		53.8	53.0		8.4	8	25.0	53.6	K 9.5	14	39.0	56.3		9.3		58.5	10.4	9.2		57.2	39.5	K
8.7	2	1.9	29.4	K	9.5		34.6	19.6	9.5		44.5	57.2		9.3	20	1.0	3.9	9.5	27	14.1	19.9	B
9.3		25.3	52.3		9.5		52.3	29.8	9.5	15	2.9	1.6	*aB*	9.4		7.2	26.4	B 8.8		14.4	52.6	
9.5		48.0	23.3		7.5	9	14.1	3.0	Kb 9.5		6.5	9.3	*aB*	8.8		31.7	15.0	9.5		20.6	8.5	
9.5		52.3	48.0	B	9.3		22.1	1.1	*a* 9.0		14.3	0.7	K	9.0	21	43.8	52.7	K 9.3		27.5	1.2	
8.0	3	13.8	29.1	K	8.5		35.8	33.2	K 9.5		21.8	35.8		9.4	22	1.0	17.5	B 9.5		35.8	41.9	
9.4		14.3	51.5		9.5		39.8	6.7	9.5		41.8	42.5		9.2		16.0	53.3	9.1		37.5	21.9	
7.8		14.8	15.3	K	9.5		49.2	20.5	B 7.7	16	11.2	56.1	K	9.5		22.6	40.9	B 9.5	28	0.2	9.5	
9.5		23.6	16.1		9.0		53.3	39.5	K 9.5		34.3	2.2	B	9.3		48.7	4.9	9.0		11.3	34.0	Kb
9.2		46.3	58.2		9.5		56.8	31.0	9.5	17	12.8	2.0	B	9.5	23	3.8	31.4	9.5		27.0	2.0	B
8.8		48.4	51.1		9.0	10	5.3	31.2	K 9.0		42.3	17.1		9.3		43.9	48.9	9.5		28.0	3.4	
9.5		56.8	47.1		9.3		8.0	9.2	9.5		43.7	55.7		8.8	24	1.7	19.9	K 9.2		36.0	57.0	
9.5	4	21.8	32.5		9.5		38.3	13.7	6.2		58.5	7.7	K	9.3		11.8	28.3	9.5		39.6	1.0	
9.3		47.8	29.8		9.5	11	21.8	1.6	9.5	18	15.8	30.8		9.3		20.8	19.7	9.4	29	6.6	20.1	B
9.5	5	58.3	38.1		9.0		23.8	31.0	9.5		22.4	1.7		9.5		24.8	39.5	K 8.8		21.3	3.8	
9.3	7	8.3	38.5		9.5		37.8	37.9	8.3		31.4	8.3	Kb	9.5		46.3	27.8	9.0		50.0	49.0	B
		+	+				+	+			+	+				+	+			+	+	
10 *pr.*		30.72	3.34		10 *pr.*		30.73	3.34	10 *pr.*		30.74	3.33		10 *pr.*		30.75	3.33	10 *pr.*		30.76	3.31	

+1°

101—160

m	0ª		+1°	
	′	″	′	
9.5	29	54.3	51.0	
9.5	30	0.0	12.3	
9.5		2.2	23.0	
9.4		11.9	17.8	B
8.8		25.3	36.0	
9.5		32.2	20.5	B
9.0		34.8	46.4	B
7.5		36.0	57.4	L
9.5		52.5	17.7	
8.8	31	0.7	38.5	
9.5		4.8	52.2	
9.5		30.3	46.4	
9.5	32	2.8	5.8	
9.5		5.3	55.4	
9.5		44.3	43.0	
9.0		54.8	15.1	
9.5	33	56.0	0.6	B
8.8	34	20.7	30.6	
8.7		34.0	54.6	
9.5		41.0	39.7	
9.3	35	4.8	23.0	
9.5		14.3	35.2	
9.4		31.7	2.3	
7.8		51.8	15.7	L
7.8		58.0	47.8	Lb
8.3	36	2.8	31.0	
8.8		44.8	40.9	
8.8	37	6.8	48.2	K
9.1		31.9	27.6	aB
9.4		38.1	41.9	
8.2		38.7	0.3	K
8.5	38	18.2	41.6	Kb
9.5		34.8	52.9	
9.2		46.5	4.6	aB
8.8		54.2	17.7	
8.8	39	18.8	10.5	
8.5		21.5	33.0	K
9.5		36.9	56.7	B
9.4	40	27.7	25.4	
9.3		31.4	20.3	B
8.8		44.7	45.7	
8.5		46.1	56.5	K
9.4	41	0.1	20.4	B
9.1		40.6	8.1	b
9.0		46.2	29.5	
9.4	42	1.9	13.8	B
9.5		12.2	54.6	B
9.5	43	6.2	14.4	
7.3		37.6	57.0	L
9.0		58.8	6.1	
8.8	44	0.5	35.1	
9.5		43.8	56.0	
9.3		59.4	11.9	B
9.5	45	21.5	40.3	
9.5		42.4	21.1	B
9.5		58.3	49.5	
9.5	46	4.7	6.8	
8.5		11.0	7.0	K
9.0		32.8	15.0	
9.5		45.5	28.9	
10 pr.		+ 38.78	+ 3.29	

161—220

m	0ª—1ª		+1°	
	′	″	′	
9.5	47	28.3	48.5	B
9.4		38.5	37.4	B
9.5		49.3	31.6	
9.3		52.8	30.8	
9.2	48	2.5	30.3	
9.5		7.8	45.0	
9.2	49	2.0	4.7	
8.7		16.0	4.4	K
9.0		19.7	9.3	
9.5		21.0	40.2	
9.5		30.2	16.8	
9.0		42.8	59.2	
9.4		57.2	9.8	B
9.5	50	2.2	6.8	
9.5		6.5	57.4	
7.8		16.5	18.2	Kb
7.8		31.2	40.9	
9.3		52.8	16.7	
9.0		55.2	48.8	
8.7	51	35.2	51.9	K
9.5		43.8	23.8	
9.3	52	20.7	47.2	
9.5		24.5	13.8	
9.4		34.7	19.7	B
7.5		40.7	50.6	K
9.1		45.6	15.9	aB
8.5	53	24.2	48.5	K
9.5		39.7	26.4	
9.5		51.2	3.6	
9.5	54	30.0	15.9	
8.0		31.0	44.7	K
9.4		36.0	18.7	
9.0		44.4	21.9	B
8.8	55	15.6	27.2	K
9.2		18.1	58.2	
9.3		20.7	7.7	
9.3		23.6	17.8	B
9.0		28.2	34.2	K
9.5	56	21.7	23.9	
9.3		53.2	22.2	
9.3		56.2	56.6	
9.2	57	2.0	36.5	aB
7.3		17.0	32.4	K
9.5	58	14.6	24.6	
8.5		16.5	41.4	K
8.5		39.5	51.7	K
9.0		41.5	11.8	
9.3	59	13.5	32.2	
9.4		50.6	32.3	B
9.3		54.7	16.3	B
9.3	0	9.2	16.9	B
7.0		34.0	14.2	Kb
9.5		45.0	3.6	
9.5		50.0	21.5	
9.5		53.5	57.7	
9.2		57.7	54.2	
8.5	1	45.0	46.7	K
9.5	2	47.2	4.1	
9.3		53.0	3.8	
8.6		59.5	47.1	K
10 pr.		+ 38.80	+ 3.24	

221—280

m	1ª		+1°	
	′	″	′	
6.0	3	10.1	39.4	K
9.3	4	16.9	52.4	
6.8	5	5.9	41.6	K
9.5		39.0	38.9	
9.5		56.2	57.6	
9.2		57.6	56.9	
9.4		59.1	21.0	B
9.5	6	9.9	22.0	
8.5		15.9	48.2	K
8.6		28.9	16.0	B
9.5		37.2	20.1	B
9.2		46.2	54.8	
8.8	7	14.0	32.7	
9.0		58.4	30.6	
9.5	8	11.8	36.0	
9.0		37.5	31.8	
9.0		51.9	38.2	
7.8	9	6.9	57.8	Kb
9.5		19.3	17.9	
9.2		21.1	8.0	
7.8		42.4	15.4	K
8.2		53.1	5.1	K
8.5	10	48.9	47.2	K
9.5	11	7.9	17.9	
8.8		16.9	16.1	
9.0		27.4	13.3	
9.3	12	23.4	45.7	
8.8		49.9	43.7	Kb
9.3	13	42.4	49.8	
9.3	14	30.9	47.8	
9.5	15	32.4	27.2	
8.8		36.5	52.4	
9.5	16	0.9	29.6	
9.5		4.4	57.6	
9.2		9.5	8.6	aB
9.0		25.4	32.3	
9.0		32.3	54.6	
9.5		36.9	48.2	
9.5		52.4	49.2	
9.0	17	59.4	39.2	
9.3	19	15.9	30.6	
8.8		36.4	23.0	
9.5	20	22.4	24.4	
9.5		37.9	53.9	
9.5		40.9	27.2	
9.0	21	17.4	45.1	
9.5	22	23.8	46.2	
9.5		37.4	33.7	
8.5	23	24.4	29.4	
9.5		53.4	5.4	
8.8	24	9.7	50.6	
9.5		37.9	29.2	
9.3		51.4	51.6	
9.5	25	42.0	52.8	
9.1		49.4	17.4	B
8.5	26	10.3	37.6	R
8.3		25.4	50.3	Kb
9.0		35.5	14.1	B
8.0		39.4	43.0	K
9.5		45.4	4.8	
10 pr.		+ 38.83	+ 3.16	

281—340

m	1ª		+1°	
	′	″	′	
9.2	26	50.5	26.2	aB
9.2		53.2	25.5	aB
9.5		53.2	28.0	
9.3		56.4	55.1	
9.5	27	27.4	17.5	
8.9		36.7	0.2	K
9.5		41.6	44.4	
9.0	28	5.2	54.3	
8.8		22.9	58.1	K
9.3		56.2	47.4	
8.8	29	47.8	50.6	K
9.5	30	24.0	58.0	
7.8		52.9	50.7	Kb
9.5	31	40.8	51.3	
8.8		52.0	27.4	K
9.5		56.2	57.9	
9.2	32	19.4	31.5	
9.4		44.4	22.7	
9.5		47.3	6.9	
8.8	33	11.0	10.5	K
8.2		18.0	58.3	B
8.8		54.7	55.0	K
9.5	34	12.8	48.5	
8.8		16.4	10.6	
9.0		26.3	10.6	
8.2		24.2	57.8	K
8.8		34.4	44.0	
8.3		42.3	34.9	L
9.5	35	26.2	58.2	
8.6	36	50.8	53.4	K
8.8	37	8.8	15.1	K
9.5		29.0	59.0	
7.7		36.8	47.1	K
9.5	38	12.9	51.1	
9.3		17.8	43.7	
9.0	39	1.0	57.8	Kb
9.5		23.3	26.8	
9.5		49.8	57.2	
8.8	40	4.8	16.8	
8.3		43.3	10.0	
9.5		43.9	26.1	
8.5		46.1	59.4	
9.5	41	0.6	55.4	
9.3		8.3	24.1	
9.3		19.2	11.0	
9.5		24.7	55.2	
9.5		46.4	52.7	
9.5		49.8	48.5	
9.5	42	4.4	25.1	
9.5		6.7	54.9	
9.2		9.2	55.1	
9.5		13.3	51.3	
8.8		31.9	49.9	
9.5		52.4	4.4	
8.8	43	6.8	48.6	
9.5		42.8	16.8	
9.5		52.3	27.9	B
9.5		59.1	59.8	
9.4	44	3.8	59.1	
8.5		6.2	41.7	K
10 pr.		+ 38.87	+ 3.05	

341—400

m	1ª—2ª		+1°	
	′	″	′	
9.5	44	29.8	27.8	B
9.5	45	2.5	58.7	
8.5		10.0	47.1	K
9.3		18.8	0.3	
9.3		21.7	2.7	
9.0	48	6.4	4.5	
6.2		23.9	7.5	K
9.0		28.3	26.7	
9.0		38.5	22.2	K
9.5	49	5.7	12.9	B
9.3		9.8	49.2	
9.0		35.3	34.4	
9.3	50	47.3	35.8	
9.0		54.4	37.1	K
9.5	51	43.8	27.1	
9.3	52	43.6	14.0	b
9.5	53	17.5	45.1	
9.5	54	28.8	49.6	
9.5		33.7	7.1	B
9.5		44.5	7.1	B
9.3	55	2.3	36.2	
8.3		17.8	14.4	
8.5		35.1	9.4	
9.5		49.1	54.4	
9.3	56	33.9	34.4	b
9.3	57	9.8	13.7	
9.0	58	13.8	12.3	
9.3		21.1	27.5	
9.0		46.4	56.2	
9.3		57.3	32.0	
9.0	59	22.4	50.5	K
9.5		50.0	40.6	
9.5		53.8	2.1	
9.5	0	10.3	59.7	
8.8	1	9.9	14.4	Kb
9.3		15.8	17.8	
8.3	2	12.5	1.3	K
9.5		37.8	31.6	
9.0		56.0	18.8	K
9.2		56.3	57.1	b
9.2	3	8.3	36.3	
9.3		47.1	56.7	
9.5		48.9	35.3	
9.0		59.7	2.4	K
9.5	4	4.4	7.0	
9.0		54.0	49.2	K
9.5		59.1	28.7	
9.5	5	12.6	33.2	
9.5		14.3	27.1	
9.0		45.3	55.0	K
9.2	6	33.6	57.6	
9.3		35.4	47.0	K
9.3		40.4	55.7	
9.3		57.1	29.8	
9.5	7	5.6	25.0	
9.0		16.6	33.3	
9.2		20.6	51.6	
9.0		46.8	41.6	K
9.3		46.8	10.4	
9.5		51.3	55.5	
10 pr.		+ 38.89	+ 2.81	

401—460					461—520					521—580					581—640					641—700				
	2ᵐ		+1°			2ᵐ		+1°			2ᵐ—3ᵐ		+1°			3ᵐ		+1°			3ᵐ		+1°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.3	7	58.7	8.8		9.5	30	51.8	47.4		9.5	52	10.6	43.6		9.5	13	56.1	59.9		8.5	32	3.5	41.8	
9.5	8	7.1	48.5		8.5	32	17.1	30.1	L	9.5		11.3	38.4		9.5		58.1	3.0		9.2	33	3.6	56.3	
8.0		58.1	35.0	L	9.5		59.9	42.2		9.5		57.6	38.1		9.5	14	47.3	15.9		9.5		4.0	33.2	
8.2	9	0.6	24.0	K	8.5	33	2.3	15.3	K	9.5	53	26.4	55.3		8.8	15	10.2	56.9	K	9.5		11.0	33.9	
9.5		19.1	41.2		9.5		45.1	43.3		9.5		35.7	0.1		9.3		37.8	57.0	Kb	9.0		19.5	35.7	
8.2		19.7	53.9		9.5		49.6	41.2		9.5		56.1	33.9		9.5	16	1.3	42.1		8.8		39.6	58.7	
7.7		44.8	11.8	Kb	9.0		50.1	36.7	K	9.0	54	3.6	12.2		8.5		56.3	34.5	K	9.5		42.0	15.7	
9.5		50.1	31.6		9.5	34	5.6	56.9		8.8		7.6	36.7	K	9.3	17	6.3	39.3		9.0	34	39.3	55.1	
9.5	10	20.1	42.2		9.5		13.1	29.8		9.2		7.8	58.3		9.5		15.3	50.3		9.0	35	2.5	34.0	
5.8		30.4	4.0	K	9.0		46.9	53.2		9.5		12.1	59.8	a	8.5		25.3	28.2	K	9.2		8.3	52.2	
9.3	11	19.1	16.4		8.5	35	28.1	39.8	K	9.0		52.6	38.0		9.3		57.3	33.8		8.8		37.0	30.9	K
8.2		49.8	59.9	Kb	9.3		46.6	23.6	a	9.5	56	19.6	3.9		9.0	18	10.8	31.3	Kb	9.1		42.9	3.2	b
9.0	12	24.1	49.5		9.0		47.1	17.7		9.3		34.8	34.2		9.3		39.3	44.5		9.5	36	34.0	30.4	
9.5		50.1	29.5		8.5		50.6	7.6	L	6.5	57	9.8	19.0	K	8.7		54.1	9.3	K	9.5		51.0	4.2	
9.5	13	55.6	24.3		9.3	36	3.9	54.6		9.0		33.6	21.0		8.5		52.3	40.0	K	9.0	37	7.5	49.0	
9.5	14	31.4	10.1	B	9.5		57.6	16.7		8.3		46.8	20.4	K	9.5		58.8	3.3		8.0		11.5	30.4	
8.5		46.6	47.8	Kb	9.5	37	19.1	3.3		9.5		53.8	11.4		7.5	19	44.5	46.2	Kb	9.3		32.0	4.9	
9.4		55.1	10.1	B	9.5		27.1	19.8		9.1	58	1.0	34.5	K	9.5	20	10.7	55.3	B	8.8		45.8	0.8	
9.5	15	19.6	42.6		9.5		47.7	52.9	B	8.8		2.1	40.3	K	9.3		25.3	39.7	B	9.5	38	22.0	37.8	
9.0		26.6	41.6	K	9.4	38	5.7	54.9	B	9.4		22.7	33.3	B	9.5		31.5	58.4		9.5		40.5	53.2	
9.3		46.6	9.1		9.5		6.8	29.8		8.3		36.8	47.6	K	9.4		46.5	6.0	B	9.0	39	8.5	53.2	
9.4		52.6	12.4		9.0		48.6	46.0	Kb	9.5		45.3	11.0		8.5	21	31.0	44.9	K	8.8		18.0	45.2	
8.8	16	3.6	55.3	K	9.3		57.2	8.1		8.8		52.8	27.3		9.5		41.3	42.9	B	8.8	40	44.0	35.7	Kb
9.5		26.6	14.3		9.5	39	10.0	50.8		9.5		59.3	36.6		9.5		42.0	30.2		8.8		53.0	9.4	
9.5	18	11.1	18.8		9.5		11.8	57.2	B	8.5	59	8.8	31.5	L	9.5		57.9	5.2		8.3	41	3.8	58.1	K
9.5		29.6	38.1		9.3		59.2	2.8		9.0		12.7	55.1	K	9.0	22	33.5	39.4		9.5	42	52.5	23.6	
9.5		52.9	29.1		8.2	40	10.4	5.7	K	9.5		30.8	34.5		9.5		50.0	40.8		7.0	43	15.1	7.3	K
9.0	19	35.9	49.3		9.5		36.1	30.7		9.5		58.8	39.6		8.5	23	4.0	34.8	K	8.0		36.2	17.5	K
9.3	20	9.3	4.6		9.5		55.1	35.5		9.2	0	8.6	48.3	aB	9.5		18.6	43.0		8.8	44	19.7	41.3	
9.3		11.4	6.1		9.5		59.0	32.2		8.5		12.0	16.9		9.5		28.4	34.7		9.3		37.7	23.3	
6.8		32.1	19.1	Kb	9.3	41	7.1	9.4		9.5		19.8	15.2	?	9.5		55.6	1.2		8.0	45	19.7	18.4	K
9.5		58.6	28.1		9.0		12.6	36.3	K	9.5	1	16.3	7.4		9.4	25	15.7	45.8	B	9.0		39.7	29.9	
9.3	21	14.6	54.7		9.3	42	10.3	18.8		9.5		20.4	22.4		9.5		33.5	8.0		6.7		58.5	40.7	K
9.5		27.6	45.6		8.5		10.3	11.5	K	9.3		50.6	29.6		9.5		47.5	23.5		9.4	46	2.5	49.2	B
9.0		30.1	39.1		9.5		30.7	1.5		9.5	2	6.3	6.3		9.3	26	15.2	45.8		9.4		10.3	44.7	B
9.0	22	0.6	33.2		9.5		35.3	5.4		9.5		10.7	34.2		9.0		27.8	43.0		8.2		35.5	44.4	K
9.0	23	51.7	38.8	K	8.5		50.4	50.7	K	9.5		17.5	39.0	B	9.4		40.8	34.3		9.0		44.0	55.5	
5.5	24	1.1	38.1	K	9.5	43	21.6	43.3		8.9		54.4	29.9	B	9.3		53.5	12.1		8.5		55.1	55.0	K
9.4	25	14.8	7.1	B	9.0		32.3	31.6		9.4		55.0	31.2		9.4		54.0	32.8		8.0	47	14.6	39.0	K
8.5		29.1	1.7		9.5		32.6	51.6		9.3		56.5	54.1		9.3		57.0	16.8		9.3	48	40.5	17.6	
9.5		48.6	55.0		9.2		40.8	4.8	a	7.5	3	25.3	45.5	Kb	8.7	27	42.5	17.6	Kb	8.0		47.6	46.6	Kb
9.3	26	0.6	44.0		7.8		47.7	5.7	K	9.5	4	6.8	35.8		9.0		43.0	30.4	K	9.3		55.5	37.6	
9.0		11.6	37.5		7.5		51.1	35.3		9.0	5	40.5	27.5		9.3	28	44.5	17.3		9.3	49	52.1	55.0	
9.3		36.6	5.6	B	8.8	44	6.1	49.2		9.0		50.3	39.3		9.0		56.5	24.0		9.5	50	17.6	47.6	
9.3	27	11.1	20.5		9.4		41.5	11.0	B	9.3	6	23.9	20.3		9.5	29	4.4	56.8		7.4		52.9	2.2	K
8.8	28	8.8	25.5	K	9.0		45.6	20.1		8.8		51.6	53.7	K	8.7		9.1	11.5	K	9.0	51	1.5	13.8	
9.3		13.3	58.1		9.2	45	17.1	7.6	b	8.8	7	26.7	4.3	K	9.5		18.0	15.1		9.0		41.0	5.1	
9.5		32.8	44.6		9.0	46	7.1	17.4		9.0		43.7	1.5	K	8.8		32.0	37.0		9.5		58.0	57.5	
9.5		45.1	58.4		7.0		9.1	23.6	K	8.7		56.6	8.9	K	9.3		54.0	32.4		8.2	52	13.5	21.9	K
9.5		53.1	23.1		8.8	47	22.0	6.2	K	8.8	8	1.3	14.8	K	8.3		59.0	0.6	K	9.5		25.5	57.5	
9.5	29	5.1	14.0		9.5		28.6	3.6		9.5		15.8	56.6		9.5	30	33.3	5.1	B	9.0		38.0	43.1	
9.0		12.6	50.5	K	7.8	48	3.1	27.0	K	9.5		26.3	11.4		9.4		45.0	57.1	a	9.0	54	3.4	11.1	
9.0		24.1	50.5	K	9.5		37.1	47.9	B	9.0	9	23.3	48.6		9.5		51.5	18.0		9.5		32.1	42.0	
9.5		31.6	28.8		9.0	49	7.0	9.7	R	8.0		43.8	0.5	K	9.2		59.3	6.9		9.0	55	16.0	27.5	Kb
8.2		39.3	48.1	K	7.8		44.8	19.1	L	9.5	10	30.3	57.6		9.2		59.4	58.0	aB	9.0	56	39.8	4.4	
9.5		58.6	0.2		9.0	50	30.1	40.2		9.5		31.3	4.0		9.0	31	5.0	48.7		9.5		43.3	28.3	
9.2	30	23.1	34.3	Kb	7.5	51	7.6	32.5	K	8.8	11	25.8	47.5	Kb	9.0		17.5	48.3		9.3	57	26.8	25.3	
9.5		27.4	53.3		9.5		27.3	11.9		9.0	12	15.2	8.1	K	9.2		18.9	10.2		9.5		31.8	55.4	
9.5		42.6	51.8		9.3		52.8	9.5		9.3		17.2	7.9	?	9.3		39.0	51.5	a	8.2	59	10.6	17.2	K
9.5		44.8	3.9		8.0		56.0	4.0	L	9.5	13	29.0	7.1		9.5		42.1	7.6	B	9.0		22.3	28.8	
10pr.		+ 30.92	+ 2.74		10pr.		+ 30.94	+ 2.55		10pr.		+ 30.97	+ 2.36		10pr.		+ 30.99	+ 2.10		10pr.		+ 31.02	+ 1.86	

701—760					761—820					821—880					881—940					941—1000				
	3ᵐ—4ᵐ		+1°			4ᵐ		+1°			4ᵐ		+1°			4ᵐ—5ᵐ		+1°			5ᵐ		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	59	25.8	28.6		9.5	22	35.0	46.6		8.7	40	54.8	13.2		9.5	53	50.6	54.7		9.5	6	31.0	1.8	
9.0		50.3	38.2		9.3	23	16.0	6.9		9.2	41	50.0	8.3		9.5	54	6.7	21.3		9.2		32.9	18.8	
9.5		58.0	59.2		9.5	24	7.0	44.2		7.8		59.7	56.2	K	9.5		14.6	39.6		9.3	7	1.9	42.5	
9.5	0	7.0	24.5		9.0		8.7	51.1		9.5	42	35.8	22.5	K	8.8		25.4	51.3	K	9.5		21.3	58.9	
9.5		18.8	52.5	B	9.0		47.5	12.8	K	9.0		38.8	26.2	K	9.5		29.6	27.5		8.2		40.9	24.3	L
9.5		43.5	4.8		9.5	25	12.5	45.2		8.8		57.8	16.6	K	6.5		30.2	23.4	L	9.5		48.0	40.7	
9.5	1	7.0	58.1		9.3	26	16.9	9.7	B	9.5	43	5.8	30.8		8.3		54.9	51.7	K	9.4		52.4	11.4	
9.0		23.0	6.2		9.1		17.2	29.7	*b*	9.5		7.0	39.8		9.5	55	17.7	1.4		9.3		57.2	44.1	
9.2		32.4	2.1		9.1		22.7	22.1		8.5		21.3	39.0		9.0		21.4	9.2		9.3	8	12.5	2.8	
9.5	2	59.0	17.5		9.4		26.8	24.5	B	9.0		33.8	28.4		9.4		25.1	28.4	B	9.5		13.0	7.9	
9.0	3	29.5	34.8	K	9.5		58.5	0.7		9.5	44	12.6	15.4		9.0		46.9	29.4	B	9.5		20.5	43.6	
9.5		32.8	8.9		9.5	27	18.0	39.2	B	8.7		27.6	7.8		9.5	56	52.2	34.7		8.7		26.4	9.5	
8.2		38.0	56.8	K	9.3		36.3	1.0		9.5		37.0	19.7		9.5	57	17.2	44.8		9.5		31.9	14.7	
9.0		46.0	56.1	K	9.5		40.5	35.6		3.5		40.6	31.2		9.5		30.8	45.2		8.2		40.1	35.3	K
9.3		50.0	58.2		9.0		56.5	41.0	K	8.2		41.8	16.2	Kb	9.3	58	7.4	15.3	*b*	9.5		52.6	57.3	
9.3		57.5	38.6		9.5	28	5.0	36.3		9.5		42.5	3.9		8.5		23.4	39.5	K	9.5	9	6.0	28.8	
9.5	4	0.0	27.5		9.0		14.5	8.3	K	8.2		42.6	37.5	*B*	9.5		30.4	36.6		6.8		9.9	47.5	Kb
8.5	5	6.5	42.0	K	9.5	29	20.0	32.1		9.5	45	4.1	27.1		9.5		33.4	50.4		9.5		10.8	14.8	
7.8		27.0	32.4	K	9.5		37.0	22.5		9.5		18.3	41.4		9.5		37.1	36.6		9.1		27.7	40.8	K
9.3	6	2.5	34.0		9.0	30	5.0	56.7		9.5		21.6	8.5		9.5	59	0.4	27.5		9.5		42.2	24.2	
8.5		53.8	52.7		9.5		5.5	35.2		9.5		22.1	16.8		9.5		18.4	47.8		9.5	10	22.6	34.0	
8.0		53.8	17.1	Kb	9.0		7.3	13.8	K	9.5		41.7	9.2		9.5		30.6	30.5	B	9.3		31.2	50.9	
9.5	7	5.2	58.6		9.5		15.5	14.9		8.8		51.4	17.2		9.5		46.3	4.2		9.5		45.5	28.0	
9.5		51.5	52.4		9.5		17.0	11.1		9.4		56.4	37.5		9.5		57.6	21.3		9.5		48.7	40.4	
9.0		58.5	39.2		9.5		55.0	20.8		9.5		58.9	28.2		9.3	0	11.0	10.2		9.3		53.6	59.8	*b*
9.5	8	4.0	24.7		9.5		59.7	10.4		9.3	46	20.6	24.0		9.5		16.6	55.9	B	9.0		57.3	5.8	
9.5		41.0	46.4		9.0	31	0.0	46.9	K	7.5		25.9	19.6	L	9.2		16.6	50.5	*b*	9.0		57.5	56.0	B
8.8		55.0	42.7	K	9.5		9.9	2.8		9.5		26.2	52.0		9.5		41.3	24.9		9.5	11	27.6	24.9	
9.0	9	11.7	58.6		8.5		36.5	50.2	K	9.0		33.2	35.5		9.5		41.3	45.4		9.0		43.8	33.8	
8.8		58.5	47.2	K	9.5		49.5	47.2		8.2		36.6	4.9	K	9.5	1	1.1	25.8		9.4	12	5.6	24.0	
9.5	10	8.5	46.5		9.5		55.5	24.2		9.5	47	1.2	49.9		9.0		7.6	5.4	K	9.5		9.1	18.7	B
9.5	11	26.0	46.6		9.5	32	12.0	10.8		9.0		2.4	13.0		9.3		17.1	57.3		9.3		10.9	53.0	
8.3		26.2	25.5	L	9.5		23.0	8.7		9.5		39.1	5.0		9.3		18.2	13.7	B	9.2		16.9	26.1	K
8.3		28.7	23.7	K	9.5		26.2	48.2		8.6	48	6.4	31.6		9.5		29.6	29.8		9.4		20.0	10.1	
8.7	12	6.3	51.0		9.5		39.0	49.4		9.3		10.6	16.7		9.5		37.9	59.0		9.5		34.2	36.6	
9.1		14.6	27.3	*a*B	9.2	33	5.1	55.5		9.5		18.7	13.0		9.0	2	9.6	45.6		9.5		37.3	53.5	
8.8		39.5	37.5	K	9.5		15.5	47.6		7.5		30.6	23.3	L	9.4		28.0	31.9		9.5		49.6	3.5	
9.5		39.5	8.5		8.7	34	0.2	36.9		8.8		36.8	2.7	B	9.5		31.9	20.4		9.5	13	9.2	22.1	
9.5	13	28.0	53.7		8.9		14.9	0.8		8.0		38.6	48.5	L	9.5		36.5	19.3		9.5		10.2	41.8	
9.5		37.0	32.4		9.0	35	5.8	10.0	Kb	9.1		47.2	36.5		9.2		56.9	26.1	*b*	9.5		15.0	12.5	
9.3		51.0	27.5		9.5		27.3	28.7		8.5		50.5	7.5		9.5	3	1.0	27.1		9.2		50.2	24.3	K
9.3	14	8.5	45.8		9.0		29.5	55.0		9.5	49	13.2	58.9		9.5		4.8	19.7		8.9	14	1.3	43.3	
9.5		37.7	57.8		9.5		33.5	56.2		8.8		15.4	36.4		9.0		7.3	10.2	K	9.3		4.7	17.2	
9.4		57.1	32.5	B	9.0	36	15.8	38.4		8.5		19.2	17.2	Lb	9.2		9.2	53.7		9.5		14.8	42.6	
9.2	15	12.4	10.3	*b*	8.7		21.3	5.9	L	8.7		32.1	52.6		9.5		34.2	29.2		9.1		14.9	25.8	K
9.5		34.0	4.4		9.5		26.0	27.6		9.5		43.1	31.3		9.5		49.7	42.7		9.2		27.7	12.5	
9.5	16	22.8	37.2		9.5		29.3	22.0		9.0	50	3.6	20.2		9.4	4	1.9	6.3		9.4		33.7	12.9	
9.3		27.0	38.7	B	9.5		32.1	48.2		9.5		9.7	12.2		9 5		16.5	54.0		9.5		41.7	27.2	K
8.2	17	52.4	52.9	K	9.3		35.5	48.6		8.3		34.7	26.8	K	9.5		25.2	4.2		9.5		43.4	41.8	
9.5	18	48.2	30.6		8.8		37.0	43.8	K	9.3		47.9	23.4		9.5		38.8	53.2		9.5	15	16.9	33.7	K
9.3		55.6	20.8		9.5	37	11.0	18.5		9.0		49.9	51.0		9.3		47.7	39.4	B	8.7		30.2	33.0	K
9.5	19	15.5	54.2		9.5		11.5	40.4		5.0	51	2.2	30.8	K	9.0		48.7	9.0		7.8		36.1	8.9	K
6.3		29.6	45.3	K	8.5		25.8	20.7		9.0		23.6	56.8		9.5	5	2.0	3.7		9.5		54.9	50.6	
9.4		32.0	48.6		9.0		26.5	5.2		9.4		29.2	15.2	B	9.5		3.5	29.2		9.5		57.3	38.7	
6.5	20	33.0	32.2	K	9.5		36.3	18.6		9.5	52	10.1	41.3		9.3		28.6	54.2		9.4	16	14.4	41.3	
9.5		46.5	41.8		9.5		49.8	5.5		9.5		26.2	27.2		9.5		49.3	23.0		8.2		18.9	57.1	L
5.7	21	2.9	3.1	K	9.0	38	30.8	0.5	K	9.5	53	4.7	51.9		9.5		54.3	33.5		9.5		35.1	40.7	
9.5		21.0	32.1		9.5		52.0	37.6		9.5		4.9	53.4		6.8	6	0.4	47.2	L	9.4		36.9	29.7	K
9.3		58.0	29.7		8.6		56.2	3.4	K	9.5		4.9	21.0		9.5		18.8	20.9		9.0		41.4	38.1	
9.5	22	26.0	35.5		9.5	40	27.3	38.7		8.8		40.9	56.3		9.3		25.0	1.4		9.3		49.6	27.7	
		+	+				+	+				+	+				+	+				+	+	
10pr.		31.03	1.54		10pr.		31.05	1.25		10pr.		31.05	1.05		10pr.		31.06	0.86		10pr.		31.06	0.70	

5ᵉ — 6ᵉ +1°

1001 — 1060

	5ᵉ	+1°	
m	′ ″	′	
9.5	16 52.2	33.2	
9.2	17 0.3	43.5	*a*
8.5	5.3	39.8	B
8.3	7.4	40.5	K
5.0	14.2	42.4	K
9.5	21.3	50.5	
8.2	34.6	2.1	P
9.2	39.6	7.6	
8.7	41.3	47.1	K
9.5	18 7.8	30.0	
9.2	39.9	45.8	
9.3	51.6	25.3	
9.3	19 5.9	4.8	
9.5	13.8	43.7	
8.7	16.6	56.2	Kb
9.2	30.2	11.3	
9.1	47.9	27.8	
9.2	48.9	21.6	
9.5	20 10.6	14.7	
9.5	26.2	37.2	
7.2	32.2	10.6	L
9.0	42.7	26.3	
8.8	45.2	14.7	K
9.3	21 6.9	28.1	*a*
8.3	12.5	6.0	K
7.9	15.2	31.4	K
9.2	26.9	22.2	K
8.7	36.7	2.2	K
9.2	47.9	2.8	K
9.5	51.1	44.6	
9.5	59.0	35.5	
7.2	22 23.3	39.4	L
9.1	23.9	59.6	
9.5	26.0	46.9	
9.3	34.9	27.4	
9.3	37.3	7.6	
9.5	57.8	40.5	
9.4	23 11.2	0.3	K
9.0	21.7	29.9	L
9.4	25.3	1.7	Kb
9.3	28.7	10.2	
9.5	39.7	32.9	
9.5	44.9	16.4	
9.5	[illegible]	14.7	
8.2	[illegible]	5.0	K
9.5	[illegible]	4.9	
9.0	24 [illegible]	50.2	K
9.5	5.5	33.4	
9.5	10.0	51.5	
9.3	26.2	59.0	
9.2	[illegible]8	4.9	
9.5	32.5	39.7	
8.8	25 7.6	58.8	K
9.5	45.0	42.6	
9.5	56.1	42.8	
9.2	26 5.7	35.8	*R*
9.5	10.0	55.5	
7.2	26.7	18.6	L
8.8	55.6	15.1	
9.5	27 15.7	38.0	
10 pr.	+ *31.06*	+ *0.55*	

1061 — 1120

	5ᵉ	+1°	
m	′ ″	′	
9.0	27 18.6	25.1	Kb
9.5	22.0	5.0	
9.5	51.9	7.8	
8.8	28 13.6	13.2	K
9.2	14.4	56.0	
9.5	19.9	15.7	
9.0	34.6	43.5	K
9.5	37.1	46.4	
9.5	38.0	54.0	
9.4	50.9	40.7	
9.5	29 26.6	0.8	
9.5	39.0	34.0	
9.5	46.0	50.2	
9.5	56.3	6.9	
9.5	30 4.7	37.1	
8.0	44.2	53.6	Kb
9.3	48.0	16.5	
9.5	48.4	38.6	
9.4	49.6	1.8	
9.5	31 3.3	47.7	
9.5	5.1	41.2	
9.0	12.2	11.6	
9.5	25.4	51.3	
9.5	25.8	38.5	
9.5	39.8	9.5	
9.5	46.2	39.4	
9.5	32 7.0	33.5	
7.8	17.7	24.8	K
9.3	32.6	21.4	
9.5	34.3	8.3	
9.5	42.2	40.4	
9.5	50.0	38.0	
9.1	51.2	59.4	*ab*
9.5	33 33.4	48.8	
9.5	34.9	35.6	
9.5	38.9	37.2	
9.5	53.0	23.0	
9.4	53.9	4.9	
9.5	34 8.9	38.5	
9.0	11.3	41.8	
9.1	12.9	32.3	
9.1	18.7	48.1	
8.9	50.5	49.0	K
9.5	51.5	55.6	
5.7	59.9	24.3	K
9.4	35 0.6	2.0	
8.9	29.1	25.3	K
9.5	42.0	32.2	
9.5	46.0	14.9	
9.5	51.2	49.4	
9.3	36 15.0	29.6	
9.5	31.7	22.2	
9.5	41.1	43.0	
9.5	37 11.1	37.4	
9.5	16.9	7.6	
9.5	22.0	31.0	
9.5	48.0	56.9	
9.5	38 3.0	18.0	
9.5	29.5	43.0	
9.5	39.3	34.3	B
10 pr.	+ *31.07*	+ *0.39*	

1121 — 1180

	5ᵉ	+1°	
m	′ ″	′	
9.5	38 40.3	31.2	
8.5	42.5	28.9	K
9.5	54.1	29.5	
9.4	55.6	34.2	B
9.5	58.2	44.0	
6.5	39 6.8	7.1	K
9.3	22.0	19.2	
9.5	33.0	21.0	
9.3	40.3	38.3	
9.5	49.8	30.0	
9.1	40 0.0	24.2	
9.5	12.3	3.2	
9.5	17.1	53.7	
9.5	28.6	9.3	
9.1	29.3	40.9	
8.7	42.1	39.5	L
8.3	44.8	34.1	L
9.0	48.4	11.8	
9.0	49.3	16.1	
9.0	41 12.5	59.2	K
9.5	17.1	27.5	
9.5	26.8	38.7	
9.4	42.8	24.6	
9.5	58.0	36.1	
9.5	42 9.7	26.9	
9.0	40.1	20.1	K
9.0	51.7	43.4	
7.7	59.5	57.8	Kb
9.0	43 7.0	39.3	K
9.5	44 34.5	10.4	
5.8	55.3	48.8	K
9.5	57.6	56.3	B
9.5	45 8.7	28.2	
9.5	42.2	53.5	
8.8	46 4.5	42.3	K
9.5	32.1	38.2	
9.5	47.5	44.8	
9.5	50.5	17.3	
9.2	48 22.1	57.2	
9.5	23.8	32.0	
9.2	43.8	46.0	K
9.5	45.2	6.0	
9.2	45.3	49.3	K
9.5	49 47.4	36.8	
9.3	53.0	53.1	
9.2	50 9.2	22.8	*aB*
9.3	16.6	29.6	
7.2	25.1	12.0	K
9.3	28.5	6.6	
8.2	42.5	51.0	K
6.5	53.3	49.1	K
9.5	51 26.0	21.6	
9.5	27.2	12.5	
9.5	52 6.0	34.6	
9.5	24.0	1.9	
9.5	29.1	1.4	
9.5	29.6	27.7	
9.5	37.5	31.3	
9.0	41.8	25.6	
8.6	49.1	46.9	K
10 pr.	+ *31.07*	+ *0.22*	

1181 — 1240

	5ᵉ — 6ᵉ	+1°	
m	′ ″	′	
9.5	52 56.8	25.1	*a*
9.5	53 19.3	4.5	
9.5	26.3	11.6	
8.7	29.5	58.7	K
9.0	53.3	54.4	K
9.5	54.1	38.7	
9.3	54.1	8.9	B
9.5	54 8.7	34.4	
9.5	20.0	36.7	
9.5	22.5	8.5	
8.7	33.6	45.4	K
9.5	38.3	5.2	
9.2	41.9	42.9	K
9.4	46.1	0.5	
7.4	46.3	40.8	K
9.1	52.6	5.0	K
8.7	55 11.0	6.3	K
9.5	26.5	15.1	
9.5	33.4	28.8	
9.5	38.1	10.1	
9.5	41.1	52.8	
9.5	44.0	18.6	
9.5	56 3.0	55.1	
9.3	3.1	30.9	
9.0	11.4	19.7	K
9.5	26.4	38.0	
9.3	49.1	15.3	
9.5	57 0.0	45.1	
9.5	19.7	22.5	
9.5	49.0	4.8	
9.5	54.1	12.3	
9.5	58 28.5	38.0	
9.5	41.0	24.3	
9.3	52.0	47.0	
9.5	59 8.7	10.0	B
9.5	11.7	44.6	
8.9	29.1	51.2	K
8.1	43.6	30.9	
9.5	57.4	42.3	
9.5	0 3.2	17.1	
9.5	6.3	12.3	
9.3	13.8	40.2	
9.0	17.7	41.2	
9.4	22.0	36.5	
9.5	40.0	28.5	
9.0	50.0	6.9	K
8.9	52.2	36.3	Kb
9.5	1 23.4	18.8	
9.5	40.2	4.3	
9.5	42.0	9.8	
9.5	51.0	9.8	
9.5	55.5	29.0	
9.5	2 4.5	34.3	
9.5	13.0	29.6	
8.2	17.8	0.0	Kb
9.5	50.5	22.6	
9.3	3 5.8	14.2	*B*
9.5	16.0	33.8	
9.5	19.0	7.0	
9.5	28.6	49.8	
10 pr.	+ *31.07*	+ *0.03*	

1241 — 1300

	6ᵉ	+1°	
m	′ ″	′	
9.0	3 44.3	36.7	
9.5	55.3	22.3	
8.6	4 9.4	47.9	
9.5	20.0	25.4	
9.5	27.7	53.0	
9.5	34.0	11.5	
9.5	35.5	36.3	
9.5	5 6.0	19.4	
9.2	19.0	24.6	*b*
9.5	19.0	0.3	
9.5	39.0	28.6	
8.7	47.1	48.7	K
9.5	6 7.5	29.8	
9.5	12.8	24.6	
9.4	17.4	18.0	
9.4	25.6	51.8	B
9.3	31.5	51.0	
9.4	35.9	43.7	B
9.5	42.9	51.0	
9.3	48.1	22.0	
9.3	50.4	0.2	
9.5	54.6	34.9	
9.5	7 4.2	41.7	
9.5	19.1	0.4	
9.4	24.3	7.4	
9.1	33.5	49.3	*b*
9.5	43.6	18.1	
9.5	48.0	25.9	
9.4	8 3.2	17.6	B
9.4	4.3	46.4	
9.5	16.7	38.2	
9.5	16.8	50.9	B
9.3	21.3	33.9	
9.5	21.5	46.9	
6.5	25.3	12.5	L
9.3	29.1	13.8	*a*
9.3	29.4	3.8	
7.0	52.5	7.4	L
9.5	9 0.7	42.0	
9.1	2.2	20.0	
9.1	7.4	55.4	
9.1	14.2	23.5	
9.5	23.4	43.6	
9.3	24.2	25.0	
8.1	33.0	43.8	K
9.0	41.3	2.8	
9.5	54.1	39.8	
9.2	56.9	22.9	*b*
8.9	10 4.0	57.7	K
8.4	5.3	49.8	K
9.5	6.0	15.1	
9.2	10.4	58.1	*a*
9.5	12.7	27.5	
9.1	19.6	53.7	
8.7	45.3	36.9	K
9.5	54.1	2.3	
9.5	57.0	34.2	
9.5	11 10.8	54.2	
9.5	16.0	5.9	
9.5	22.1	7.5	
10 pr.	+ *31.07*	− *0.12*	

+1°

1301—1360					1361—1420					1421—1480					1481—1540					1541—1600				
	6ᵐ		+1°			6ᵐ		+1°			6ᵐ		+1°			6ᵐ		+1°			6ᵐ		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	11	24.7	54.8		9.4	21	23.3	21.3		9.0	29	22.8	26.0		9.4	36	24.0	32.0		9.5	42	58.8	52.3	
9.5	12	30.7	28.5		9.5		36.8	50.0		9.5		31.1	53.0		9.5		31.5	27.0		9.0	43	0.6	7.8	
9.5		38.2	9.8		8.6		38.3	26.8	K	9.5		40.3	30.4		9.5		42.7	1.5		9.4		3.7	38.9	
9.5		49.7	12.0		9.4		56.3	14.6		9.2		41.1	13.5	B	9.5		45.8	48.8		9.3		20.5	40.6	
9.3		53.7	28.9		9.4	22	9.5	28.9		9.5		42.8	56.9		9.3		47.3	18.2		9.5		21.7	33.3	
9.3	13	1.5	57.3		9.3		13.0	33.2		9.3		45.2	19.5		9.5		49.7	2.5		9.2		38.4	16.6	a
9.3		7.5	33.9		9.5		19.7	42.6		9.5		53.9	14.1	a	9.0	37	7.2	25.9		9.0		38.7	18.3	
9.2		19.7	56.1	b	9.5		24.6	28.5		9.3	30	5.1	46.5	B	9.2		17.0	15.6		9.5		46.3	40.1	B
9.2		20.7	10.3		9.1		25.8	33.1		9.2		5.4	20.3		9.2		25.4	45.7	b	9.2		52.5	2.9	
9.2		26.5	13.9		8.7		31.8	24.8	K	9.3		6.4	56.1	B	9.5		25.5	6.2		9.3		54.8	57.3	
9.5	14	8.2	29.9		9.2		51.7	33.8		8.2		7.3	55.5	K	9.5		26.8	57.6		9.4		54.9	12.2	
9.5		55.5	10.3		9.5	23	2.2	5.6		9.3		12.4	20.2		9.5		29.8	54.1		9.5		55.3	7.0	
8.7	15	7.9	15.1		9.5		2.4	29.2		9.5		14.9	45.2		9.4		31.6	19.0		9.5		58.0	33.3	B
9.5		10.2	27.7		9.5		8.2	57.1		9.3		19.8	35.9		9.3		33.0	35.4		9.5	44	3.0	43.6	B
9.3		19.5	27.2		9.4		20.0	2.6		9.0		26.2	19.8	B	9.2		52.0	15.9	aB	9.0		3.2	24.3	B
9.3		19.9	28.6		9.5		43.7	3.0		9.5		30.8	5.9		9.5		56.8	41.8		9.4		4.7	37.9	B
9.3		21.0	2.9	B	9.5		53.6	41.5		9.0		38.9	8.3		9.5	38	23.3	29.9		9.3		8.4	24.7	aB
9.5		54.8	44.5		9.5		55.0	11.6		9.5		39.8	49.8		8.7		26.1	7.2	B	9.5		22.3	8.5	
9.5		57.3	31.0		9.5	24	9.1	55.9	B	9.3		41.0	31.5	aB	9.1		49.6	0.5		9.5		25.7	55.6	
9.2	16	2.0	23.1		9.4		19.0	24.5		9.5		47.9	58.6		9.5		54.5	15.5		9.3		27.8	32.6	B
9.4		18.4	15.2		9.3		29.4	3.2		9.3		52.2	26.2		9.5	39	2.2	40.1		8.5		33.4	25.7	L
9.0		23.7	46.1		9.0		33.1	36.1		9.1		54.5	31.5	aB	9.5		5.0	20.4		8.6		37.2	10.8	B
9.2		35.5	19.4	K	9.5		35.4	1.4		6.8	31	7.2	44.2	L	9.3		21.4	28.4		9.3		39.0	1.7	
9.0		39.7	15.4	Kb	9.3		45.2	16.1		9.5		9.0	28.6	B	9.2		22.9	40.0	a	9.0		41.0	52.1	B
9.5	17	2.0	44.0		9.5		53.5	15.2		9.0		22.6	49.9		9.3		29.7	50.4	B	8.4		53.2	10.8	B
9.5		4.6	5.8		8.6	25	11.0	54.2	K	9.2		32.0	13.0	aB	9.0		39.9	40.5	K	9.4		59.0	38.1	
9.5		8.5	19.0		9.3		11.6	18.1		8.8		38.7	12.8	B	9.3		40.5	52.6		8.7	45	6.3	15.8	L
9.5		9.5	38.1		9.4		19.3	9.2		9.5		48.0	21.7		9.5		42.6	1.7		9.5		19.3	33.0	
9.4		16.0	28.4		9.2		20.2	3.4	b	9.2	32	16.1	5.7		9.5		52.4	19.3		9.3		19.6	15.2	a
9.0		29.3	1.5		9.5		30.0	4.8		9.4		26.8	58.5		9.4		54.0	5.9		9.4		28.3	12.5	
9.1		42.6	17.5	K	7.7		35.7	22.5	K	9.5		35.7	16.5		9.5		56.3	53.9		9.5		36.2	30.5	
7.6		47.3	34.8	L	9.5		47.1	22.7		9.5		39.6	44.9		9.4		57.0	4.0		9.5		38.3	22.7	
9.5		51.4	21.8		9.5		56.1	5.5		9.5		41.7	24.7		9.4	40	0.7	12.6		8.7	46	1.5	33.9	
9.0	18	6.0	13.1	B	9.3	26	30.9	4.3		9.2		53.0	27.4		9.5		5.0	32.1		9.1		3.7	35.5	
9.5		9.9	27.9		8.7		35.0	45.1	K	8.8	33	3.3	4.5	K	9.2		14.5	31.6		9.3		6.7	21.9	
9.0		10.8	15.4	B	9.3		35.5	21.4		9.5		4.0	30.8		9.5		24.1	29.7		8.8		7.9	41.2	K
9.3		11.2	14.0	aB	9.5		57.4	39.9		9.5		18.3	17.6		9.3		33.5	52.2	B	8.9		15.3	34.8	K
9.2		18.6	54.0	aB	9.5	27	1.8	30.8		8.7		39.7	18.1	K	9.3		39.7	32.5		9.3		19.4	35.9	a
9.5		20.0	57.3		9.3		2.3	34.0		9.5		41.6	21.6		9.5		41.1	41.7		9.5		22.2	41.5	
9.3		31.0	48.3		8.3		8.2	50.3	K	9.5		43.0	31.1		9.4		45.0	56.2		9.5		26.2	13.7	
9.1		32.7	45.5		9.3		8.5	48.5		9.4		44.7	8.3		9.3		46.9	16.5		9.5		37.4	53.1	
9.3		40.5	31.7		8.3		31.9	55.6	K	9.5		48.4	20.3		9.0		50.7	22.5		9.5		43.5	18.9	
9.3		50.0	27.9		9.5		36.0	11.9		9.5		50.4	8.3		9.2		56.0	21.4	a	9.5		53.5	1.5	
9.5	19	23.0	9.0		9.5		38.5	6.5		9.5		51.5	57.8	B	9.1	41	0.7	6.3	K	9.5	47	2.6	26.2	
9.5		28.0	46.1		9.5		45.2	37.8		8.0		57.1	5.2	K	9.4		12.7	18.2		9.5		4.4	30.0	
9.5		40.8	50.2		9.2		45.8	24.0		9.0	34	19.0	37.6		9.3		13.0	46.4	a	9.3		6.5	56.3	
9.0		42.8	39.0	K	9.3		46.3	31.1		9.3		35.3	18.1		9.2		14.3	20.2		9.2		34.8	8.0	b
9.5		51.0	2.7		9.5		58.9	5.3		9.2		39.9	24.0		9.0		17.2	43.3		9.5	48	6.4	11.0	
9.5		51.4	36.0		9.5	28	11.0	36.6		9.5		43.0	23.3		9.0		23.7	27.6		9.5		8.9	5.6	
9.5		56.4	16.1		9.5		28.4	36.3		9.5		45.5	24.4		9.5		30.6	57.8		9.5		20.2	32.0	
9.5		58.9	39.6		9.5		29.4	23.2		9.5	35	3.0	4.3		7.0		33.9	9.5	K	9.5		21.9	53.7	
9.5	20	5.2	14.7		9.5		30.8	47.8		8.1		9.1	51.1	B	9.5		52.5	49.9		9.5		24.3	9.9	
9.4		8.9	3.8		9.3		31.3	25.0		8.9		9.8	50.7	B	9.4		53.2	23.5		9.3		27.4	45.9	B
9.5		36.5	13.3		9.2		38.0	31.0		9.5		16.6	11.6		9.5	42	15.6	16.6		9.5		27.5	52.2	B
9.5		44.0	4.7		9.5		48.5	33.3		9.5		37.0	59.9		9.5		16.0	20.5		9.3		30.3	8.5	
9.2		51.1	12.9	b	9.3		52.2	30.0		9.5		39.0	47.4		9.5		20.5	54.3	B	9.3		40.9	29.8	B
9.5		52.3	9.9	B	9.3		56.3	47.2	B	9.5		39.3	51.5		9.3		32.6	0.2	B	9.1		41.5	57.1	
9.5	21	8.5	10.1		9.0	29	2.7	26.3		9.1		55.7	11.5		9.5		32.8	20.8		9.5		44.7	9.1	B
9.5		19.3	56.8		9.5		6.0	57.8		9.5	36	14.8	27.3		9.5		46.4	23.2		9.3	49	2.2	53.5	
9.5		21.2	17.8		8.3		7.2	10.1	Kb	9.1		16.0	45.2		9.3		51.9	5.8	B	8.0		4.9	22.3	K
10pr.		+ 31.07	− 0.26		10pr.		+ 31.07	− 0.38		10pr.		+ 31.06	− 0.48		10pr.		+ 31.06	− 0.58		10pr.		+ 31.06	− 0.67	

1601—1660					1661—1720					1721—1780					1781—1840					1841—1900				
	6ᵐ		+1°			6ᵐ—7ᵐ	+1°			7ᵐ		+1°			7ᵐ		+1°			7ᵐ		+1°		
m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′	
9.2	49	6.4	42.0	a	9.5	56	31.7	16.6	B	9.5	3	28.9	53.0	B	8.5	14	22.0	48.9	Lb	9.5	25	38.8	35.9	
9.0		10.7	40.3		8.8		44.9	26.4		8.2		49.7	52.3	L	9.0		22.2	15.4	B	9.0		43.2	8.3	Kb
8.6		10.7	8.4		8.8		45.8	43.3		9.3		55.7	55.1		9.5		52.3	51.7		9.2		51.8	26.6	
9.0		23.4	29.0	K	9.5		47.1	34.7		9.5	4	9.5	43.2		8.8	15	6.4	31.0		9.5	26	6.2	39.7	
9.5		37.9	10.1		6.8		49.1	42.3	L	9.5		22.5	56.6		9.5		16.7	55.2	B	9.5		7.3	28.0	
9.5		52.5	22.4		9.3		49.4	18.5	B	9.5		29.3	27.1		9.5	16	0.7	37.4	B	9.5		28.3	55.5	
9.5		57.6	30.4		9.3		59.3	22.5	B	9.5	5	17.6	31.4		9.3		10.4	53.7		9.5		30.8	37.3	
9.4	50	7.0	59.5	B	9.0	57	2.3	8.1		9.4		28.9	5.9		9.3		11.6	20.0	B	9.0		40.8	9.4	K
9.5		9.7	25.3	B	9.4		4.3	20.6	B	9.5		34.7	7.5		9.0		41.0	59.6		8.8		44.3	25.6	K
8.2		11.1	40.7	K	8.9		8.6	24.0	B	9.5		41.6	9.6		9.4		43.9	57.0		9.5		45.3	20.4	
9.4		23.1	17.6	B	9.2		14.2	26.0	aB	9.5		42.3	59.2		9.5		48.0	20.9		9.5		51.0	23.8	
8.8		29.9	24.2	K	9.5		19.0	26.1		9.3		52.7	29.3		9.4		52.5	16.9		9.5	27	19.2	5.9	
9.3		57.5	11.9	aB	8.9		22.5	46.6	B	9.3	6	7.9	58.7		8.9		57.7	38.5	B	9.2		27.2	54.2	b
9.3		57.7	22.0		8.7		24.6	18.7		9.4		12.2	20.0		9.5		58.0	40.6		9.0		43.3	40.0	K
9.2	51	8.3	13.2	aB	9.2		27.4	48.5	aB	9.4		15.4	1.1		9.1		58.7	1.1	b	9.0	28	7.2	32.2	
9.2		28.5	7.5	aB	9.4		30.1	40.4		9.3		18.7	13.0	B	8.6	17	22.0	54.2	K	9.5		33.8	36.7	
9.5		30.3	16.7		8.8		34.0	37.3		9.1		20.1	45.1	aB	9.3		32.2	30.0		9.5		51.0	41.5	
9.2		32.3	22.4		9.2		39.7	46.1		9.3		22.5	33.6		9.5		44.0	51.9		9.3	29	1.3	0.9	
9.5		54.6	42.9		9.4		49.7	31.3		9.5		32.5	45.3	B	8.9		50.0	29.9		9.2		10.6	52.4	
8.7		59.1	22.1		8.8		52.7	6.8	K	9.5		37.7	43.6		9.5	18	8.9	54.9	B	9.5		53.2	26.0	
9.3		59.8	7.9	aB	9.5	58	0.6	48.4		9.5		54.0	33.0		9.2		15.6	34.5	aB	9.2	30	0.8	56.8	
8.3	52	2.4	6.6	Kb	8.9		10.5	59.0	B	9.5		55.8	58.1		9.5		16.3	42.6		9.2		3.0	9.8	B
9.1		4.6	23.5	a	9.3		11.4	39.0		8.3	7	28.7	53.2	K	9.3		18.2	58.5		9.4		6.3	20.0	
9.2		5.0	2.7		9.5		17.0	30.8		9.3		33.3	37.0		9.4		30.3	39.6		9.5		35.2	12.1	
9.2		5.8	10.2		9.5		38.8	3.3		9.5		39.8	57.3		9.5		30.8	32.3		9.5		43.0	42.8	
8.7		9.1	16.0	K	9.5		46.3	10.0	a	8.8		42.0	16.0		9.0		51.1	57.4		9.5		48.3	53.7	
8.8		13.0	44.4		9.5		46.9	6.1		9.3		56.1	2.3	B	9.4		58.5	14.6	B	9.4	31	2.0	57.1	B
9.2		19.0	1.3		9.5	59	0.6	16.6		9.5		58.9	35.3		9.4	19	17.6	12.0		9.5		8.8	56.1	
9.0		21.3	53.3		9.3		10.9	0.4		8.5	8	0.8	2.5	B	9.5		31.8	55.1		9.5		16.4	55.3	
9.4		26.2	23.9		9.5		24.5	43.9		9.5		19.3	5.1		9.0		33.2	53.4		9.5		24.2	34.2	
9.5		28.2	43.3		9.5		24.8	0.0		9.5		19.5	45.9		7.7		48.8	45.0	Kb	9.0		27.8	0.1	
9.5		28.2	50.1		9.5		31.6	45.4		9.3		37.4	41.5	B	9.0	20	16.1	53.4		8.0		32.2	17.3	K
9.2		35.0	17.7		9.5		37.1	3.8	B	9.4		41.4	38.4		8.5		34.4	47.8	K	8.8	32	15.2	36.7	
9.0		50.2	48.4	K	9.5		58.9	24.7		9.4		44.5	9.4		9.5		38.2	9.6		9.5		42.2	44.5	
9.1		57.0	2.7	B	9.4	0	0.4	21.6		9.3		58.8	57.6		9.0		40.8	36.7		9.5	33	26.5	32.1	B
9.5	53	6.7	23.0		9.3		8.0	19.8		9.3	9	7.3	11.8		8.8		47.4	53.9	K	9.1		31.3	18.7	aB
9.3		12.5	20.7		9.5		9.8	27.9		8.4		18.1	14.0		9.5	21	6.6	48.6		8 8		41.5	28.3	K
9.2		13.8	2.8	aB	9.0		18.8	59.8		9.4		22.5	43.5	B	8.8		14.3	0.9		~~9.5~~		~~46.0~~	~~59.9~~	
9.0		14.0	15.7	B	9.3		23.4	56.5	aB	9.0		25.7	55.9		9.2		20.2	3.7	a	9.4	34	2.5	29.4	
9.4		22.1	17.3		9.2		29.3	7.9		9.2		38.4	5.7	aB	9.0		21.0	37.8		9.2		41.8	6.6	
9.5		29.8	35.4		9.5		32.8	58.7		9.4		47.0	18.0		8.3		36.6	47.8	K	9.3		56.1	14.6	
9.3		42.8	59.9		9.4		35.2	15.8	B	9.3	10	4.6	25.7		9.4		53.2	24.4		9.4	35	9.1	1.6	B
9.4		59.6	58.9		9.5		40.8	29.8		9.5		5.7	27.5		9.5	22	18.8	34.0		9.5		10.2	30.1	
9.3	54	8.0	13.0	B	9.4		52.4	5.2		9.5		6.6	25.1		8.8		29.0	54.2		9.3		14.7	8.1	B
9.1		18.6	19.1	aB	9.5		56.1	12.4		9.3		12.3	25.2		8.9		46.5	0.1	B	7.9		19.6	56.8	K
9.5		18.8	40.2		8.8	1	11.5	13.6		9.3		17.4	56.2		9.5		52.4	29.5		9.2		30.8	0.6	aB
9.5		26.4	1.9		9.2		27.3	27.3	aB	9.1		39.5	30.8	Bb	9.5		54.4	42.7		9.1		37.6	2.8	
9.5		26.6	53.3	B	9.4		39.3	10.8	B	9.0		42.2	48.2	K	9.4	23	15.6	20.3		8.3		40.7	22.5	K
9.3		40.0	32.0		9.2		47.1	22.8		9.5		59.0	35.1	B	9.5	24	2.3	57.3		9.5	36	3.3	52.7	
9.5		42.6	40.1		9.5		47.6	49.3		9.4	11	15.8	31.7		9.5		11.8	52.0		8.9		5.0	8.3	B
9.5		43.3	32.9		8.8		48.2	55.7		8.5		32.5	53.8	L	9.3		15.4	58.7		9.4		5.6	25.3	B
9.3		54.3	22.9		9.4	2	1.6	45.4	B	9.1	12	3.2	36.5		9.5		15.8	16.5		9.2		31.8	40.0	
9.5	55	31.3	7.3		9.0		11.2	35.8		9.5		7.0	50.2		7.8		19.6	28.5	K	9.0		48.3	26.2	
9.2		33.4	36.0	b	9.4		21.9	30.7		8.7		21.0	28.8		9.4		32.2	1.2	B	9.0		51.3	16.6	
9.4		49.3	1.5		9.5		37.9	34.8		9.5		34.8	15.7		9.5		44.4	20.3		9.5	37	19.4	18.3	B
9.3	56	2.2	50.4		9.4		42.9	26.1		9.5		41.4	20.3		9.3		58.5	52.1	B	9.4		20.5	8.5	B
9.5		7.5	20.0		9.3		45.8	15.0		9.3		54.6	9.6		9.0	25	3.5	51.8	~~B~~	9.3		22.5	51.8	
9.5		11.8	7.9		9.5		47.8	57.3	a	9.0	13	3.8	22.0		9.5		10.8	41.7		9.0		22.5	31.8	
9.5		13.6	35.9		8.8		54.7	52.6	Kb	9.5		33.4	13.7		9.5		12.0	19.7		9.3	38	15.3	44.5	
8.8		15.4	44.6		9.5	3	20.0	15.8		9.0		56.9	56.8		9.5		15.8	57.8		9.3		24.7	11.7	
10pr.		+ 31.06	− 0.75		10pr.		+ 31.06	− 0.86		10pr.		+ 31.06	− 0.98		10pr.		+ 31.05	− 1.14		10pr.		+ 31.04	− 1.29	

1641°				
9.7	53	34.1	6.3	B

1770ᵃ				
9.5	11	22.7	31.6	

+1° 7ʰ–8ʰ

1901 — 1960					1961 — 2020					2021 — 2080					2081 — 2140					2141 — 2200				
	7ʰ		+1°			7ʰ–8ʰ		+1°			8ʰ		+1°			8ʰ		+1°			8ʰ		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	38	33.3	47.3		9.4	50	48.2	19.4	B	9.3	4	11.8	26.9	B	9.0	16	4.4	1.4		9.0	30	47.9	5.3	B
8.8	39	3.0	24.9		9.5	51	8.0	42.3		8.7		17.6	0.7		9.3		6.6	38.6		7.3		53.5	11.7	L
9.5		3.8	20.4		9.4		8.8	13.5	B	8.7		20.6	2.3		9.4		17.9	26.8	B	9.4	31	45.5	0.8	B
9.5		30.3	43.2		9.5		10.8	36.0		9.5		22.2	50.2		9.0		30.6	45.5		8.8		52.0	8.3	Kb
7.8		41.5	16.0	Kb	9.3		24.8	1.5		9.5		36.2	23.8		9.5		40.4	31.7		9.3		52.4	2.6	
8.5	40	5.0	10.1	K	9.5		34.0	19.0		9.5		38.8	28.7		9.5		56.7	24.7	a	8.5		55.8	40.3	K
9.4		9.3	45.7	B	9.4	52	42.0	59.7	B	9.0	5	11.4	16.6		8.8	17	6.5	56.6	B	9.0	33	10.7	17.7	B
9.5		10.0	40.0		9.5	53	2.8	28.0		9.5		14.2	24.8		9.5		7.6	18.3		9.5		12.3	37.2	B
8.8		48.0	45.7		8.7		23.0	0.8	K	9.0		50.8	31.0	K	9.5		52.6	6.6		9.4		13.3	17.5	aB
9.3		53.5	34.9	B	9.3		24.2	33.8		8.8		58.2	18.0		8.8	18	5.5	25.1	B	8.0		48.0	28.6	Kb
7.6	41	30.0	1.2	Kb	8.7	54	9.3	51.9	K	8.3		59.6	49.0	K	9.0		7.8	45.1		9.5		52.5	51.1	
9.2		30.5	2.0	B	9.0		9.5	28.6		9.5	6	8.8	33.5	B	9.3		36.4	44.8		9.5	34	6.6	46.2	
9.5		38.8	57.3		9.5		39.0	46.5		9.4		14.5	16.8	B	9.5		55.2	46.5		9.5		8.8	10.6	
9.3		42.8	56.1		9.5		41.6	54.8		9.5		18.8	31.4		9.5	19	57.2	26.5		9.5	35	5.8	58.0	
9.3	42	9.8	56.4		9.5		47.0	48.0	B	8.7		20.7	41.1	K	8.0	20	2.1	18.0	K	8.5		57.8	17.0	
9.5		10.8	21.8		9.5		53.9	5.5		8.5		24.6	3.5	Kb	9.0		32.9	15.8	Kb	9.5	36	3.0	3.5	B
9.2		11.5	6.5		9.0	55	0.6	48.9		9.5		26.6	26.9		8.7		42.8	22.7	K	9.3		5.0	42.6	Kb
9.5		23.8	25.6		9.0		11.8	29.0		9.4		34.0	33.9	B	9.4		46.5	28.2	B	8.8		48.0	8.1	
9.4		24.4	9.0		8.7		18.5	24.4		9.1		54.2	12.7	K	9.5		52.5	34.7	B	9.3	37	0.2	34.7	
9.3		27.4	57.4		8.8		26.3	35.2		7.8	7	8.2	35.5	K	9.0		56.0	9.0		9.5		32.6	22.1	
9.1		34.2	9.8	aB	9.5	56	16.3	28.3		9.3		27.4	18.0		9.5		57.5	41.2	B	9.0	38	7.4	3.6	
9.5		36.2	18.0		9.5		43.0	30.7		9.5		30.4	45.2		7.4	21	6.2	44.2	K	9.0		23.6	36.2	
9.4	43	3.7	50.4	B	8.0		58.1	21.7	K	9.0		44.6	9.7	K	9.5		8.4	15.2		7.3		52.4	10.2	K
9.2		24.2	8.0		9.5	57	2.1	53.5		9.0		45.7	32.0		9.5	22	26.4	31.8	B	8.8	39	8.0	7.0	K
9.0		24.8	21.8		9.3		10.0	56.9		9.2		50.3	2.0		9.3		32.1	52.3		8.5		20.0	35.9	K
9.3		31.3	27.6		9.5		11.5	20.4		9.5	8	5.0	45.1		9.4		44.7	25.5		9.4		44.0	56.0	B
8.2		35.0	2.2	B	9.5		19.8	9.0		9.4		7.3	10.9	aB	9.0	23	0.0	36.6		9.3	40	14.4	50.7	
9.5	44	0.2	21.7		9.5		38.6	47.6		9.0		16.0	8.9	K	9.5		12.8	33.1		9.5		23.0	8.3	
9.5		17.7	35.6		9.0		53.1	56.4		9.5		19.7	9.5	a	8.5		30.7	57.1	K	9.5		26.5	3.0	
9.2		28.5	17.9	aB	8.7	58	5.7	4.2	Kb	9.2		34.3	58.6		9.0		31.8	11.7		9.0		36.0	47.6	
9.5		39.8	56.3		8.5		17.4	14.6	L	9.0		38.2	28.6		8.0		34.6	49.7	K	9.4		36.1	4.3	B
9.0	45	15.4	57.7		9.0		24.8	17.6		9.3		38.8	46.8		9.3		44.4	41.4		9.5		45.6	22.0	
8.3		22.2	11.4	K	9.3		36.8	39.8	B	9.0	9	7.7	53.8		9.5		46.4	11.0		8.0		50.6	5.0	L
9.5	46	17.7	40.8		8.3		44.2	53.4	K	9.3		20.9	1.6		8.0		53.0	5.2	B	7.9	41	12.1	28.4	B
8.8		19.5	18.6		7.9		44.3	36.5	K	8.3		43.0	47.8	B	8.5	24	2.8	24.1		9.5		34.2	37.4	
9.0		42.3	27.7		9.5	59	20.2	53.5		7.5	10	6.9	36.2	K	8.1		8.2	38.0	B	9.0		34.3	28.5	B
9.5		42.8	54.8		8.8		38.4	45.5	K	9.2		20.2	38.5	aB	9.5		37.4	23.1		9.5		36.1	38.8	
9.5		43.8	57.3		9.5	0	1.1	56.2		9.5		53.0	25.5		8.7		57.4	58.2		9.3		45.0	2.2	
8.5	47	4.4	56.3	Kb	9.0		7.0	0.4		9.0	11	0.1	9.0	K	9.3	25	15.0	23.1	B	9.4		49.7	34.8	B
9.0		10.0	34.2		9.3		20.2	9.5	B	8.8		4.0	16.9	K	8.5		36.6	43.5		9.3	42	12.5	35.5	
9.5		10.3	32.8	a	9.5		39.6	9.3		9.3		12.8	26.2		9.0		38.7	12.4		9.5		49.0	36.8	
9.3		14.4	15.2		9.5		41.6	22.4		9.3		19.6	5.5		9.5		49.2	11.3		9.4	43	34.0	1.8	B
9.4		19.2	14.0	B	9.2		42.2	49.5	b	8.7		51.2	47.1	K	8.8	26	0.4	47.6		8.2		38.5	0.7	K
9.0		22.0	11.8	L	9.0		51.8	11.8		9.0		54.7	48.6	K	9.4		10.9	19.5		9.0		44.7	53.1	K
9.3		32.5	11.6	a	9.5	1	8.6	1.6		9.5	12	5.2	16.6	a	9.5		13.3	23.3		9.5	44	25.8	52.4	
9.0		46.5	45.3		8.0		18.5	10.9	K	9.3		8.0	35.9		9.5		17.2	4.8		9.2		55.0	59.3	
9.3		49.7	28.0		9.3		39.4	35.2		9.5		40.6	6.2		8.3		42.0	38.3		9.3	45	0.3	27.2	B
9.5	48	1.3	3.6		8.0		51.7	42.1	K	9.3		54.0	17.2		9.0		48.2	21.0		~~9.5~~		~~16.5~~	~~27.5~~	
9.3		20.7	32.1		8.8		53.8	32.4		9.0		55.8	50.3		8.8		53.7	19.4		9.2		21.9	26.8	B
8.8		28.7	12.1		9.0		56.8	49.0		8.3	13	18.1	51.6	K	9.5	27	14.6	33.8		9.3		22.0	14.3	
9.5		32.7	29.4		8.7		57.0	56.2	K	8.5		27.2	34.1	L	8.0		14.8	58.9	K	9.0		28.5	5.3	
9.5		35.7	15.2		9.4		57.9	25.8	B	9.5		31.1	23.5	B	8.8		19.0	11.0		9.0		28.7	24.9	B
9.0	49	0.5	12.5		9.5	2	11.0	5.6		9.3		42.4	5.4		9.5		42.6	58.3		9.5		47.5	6.3	
9.3		4.7	19.7		8.0		29.2	26.5	B	7.8		47.6	31.3	K	9.3		53.0	45.2		9.3		54.0	43.0	
8.5		34.3	53.3		9.4		54.6	55.6	B	9.5	14	13.7	37.9		9.0	28	17.0	18.6		9.5		59.5	16.4	
9.4		39.0	21.9	B	9.5	3	23.2	44.5		9.5		28.8	45.1		9.5		38.0	31.4		8.8		59.7	53.5	K
9.3		39.9	39.8	B	8.0		45.7	42.2	K	9.5		29.9	26.7	B	9.3		48.6	15.5		9.0	46	45.0	23.5	
9.5		45.1	43.3		9.0		46.7	41.4	K	8.8	15	13.0	29.3	K	8.8	29	13.8	59.3		9.0	47	4.7	59.5	
6.5		49.2	32.2	K	9.0		52.2	13.1		8.8		22.6	27.9		9.0		16.4	23.8		8.5		9.5	30.5	K
9.5	50	2.7	1.3		9.4	4	8.0	48.0	B	9.0	16	1.8	51.1		9.0		41.6	15.5		9.4		14.6	9.0	B
		+	−				+	−				+	−				+	−				+	−	
10pr.		31.04	1.47		10pr.		31.02	1.64		10pr.		31.02	1.78		10pr.		31.01	1.97		10pr.		30.99	2.16	

1968ʰ				
9.6	53	8.0	40.8	B

2201 — 2260

	8ᵃ — 9ᵃ	+1°	
m	′ ″	′	
9.5	47 42.0	17.0	
9.5	44.0	50.4	
9.3	48 20.8	56.8	
8.0	29.0	26.1	K
9.3	49 3.1	5.8	B
9.3	14.9	9.7	
9.5	15.0	51.4	
9.0	36.0	20.2	
9.3	40.2	51.9	
7.5	46.3	5.3	*B*
8.5	59.3	56.6	
9.5	50 0.8	53.1	
9.5	51 29.0	44.7	
9.5	52 0.0	31.6	
9.1	1.7	58.6	*a*B
7.9	5.5	58.3	K
9.0	13.0	58.2	K
8.5	28.5	9.5	
9.3	29.6	51.7	B
7.7	53 37.5	51.2	K*b*
9.0	50.5	54.5	
9.3	54 4.5	9.9	
9.5	27.0	31.3	
9.5	32.9	23.2	
9.5	41 5	1.5	
9.4	55 15.3	25.1	B
9.4	27.1	51.3	B
9.5	54.1	15.7	
9.2	57 4.0	29.9	*a*B
7.6	12.7	29.2	K
8.3	33.5	36.9	K
9.5	58.6	49.9	
9.3	58 4.7	37.2	
9.3	56.5	49.1	
9.3	59 15.1	54.8	
9.5	18.9	5.0	
7.7	56.4	10.2	K
9.2	0 1.7	46.0	*a*B
9.4	2.6	29.9	
9.5	37.9	48.0	
9.3	55.9	12.3	
9.5	1 18.3	41.4	
9.3	2 13.8	54.5	
9.5	37.5	42.6	
9.4	40.4	50.5	
9.5	53.0	57.3	
8.5	3 7.1	39.3	K
9.5	10.0	59.7	
9.0	14.9	48.9	K
9.4	54.6	3.4	B
9.5	58.6	9.1	
9.3	4 17.8	40.0	
9.0	47.5	6.6	B
9.2	56.8	1.0	*B*
9.5	59.6	50.6	
9.5	5 22.1	42.4	
9.5	6 2.2	29.9	
9.3	2.9	1.9	
8.8	28.0	44.8	K
9.5	7 26.6	48.6	
10pr.	+ *30.97*	− *2.33*	

2261 — 2320

	9ᵃ	+1°	
m	′ ″	′	
8.8	7 31.3	37.5	
9.5	51.6	22.0	
8.8	8 0.2	36.5	K
9.4	11.0	0.2	
9.5	9 5.3	55.5	
8.8	7.6	11.4	B
6.8	13.4	20.5	K*b*
9.0	33.9	41.1	B
9.5	43.1	59.3	B
9.0	51.6	1.8	
7.3	10 6.6	9.8	K
9.2	21.6	36.8	*B*
9.5	45.9	35.4	
8.0	49.4	18.8	K
9.4	58.4	0.8	
9.1	11 26.9	1.5	
8.0	12 2.2	30.3	K
9.3	28.4	48.0	B
9.3	36.9	10.9	*a*
9.3	44.0	5.0	
9.3	45.3	30.6	
8.8	49.1	12.9	
8.8	52.2	20.6	
9.5	13 5.6	6.7	
8.5	20.4	29.0	K
9.2	44.2	51.5	*b*
9.5	14 5.6	42.4	
9.3	6.9	19.2	
9.5	20.0	52.1	
9.3	50.0	53.1	
9.5	15 17.0	15.5	B
9.3	46.6	31.3	
8.8	16 37.3	12.2	
8.8	17 24.3	38.2	K
9.5	36.6	20.9	
9.5	37.5	15.0	K
9.3	18 5.3	36.5	*a*
9.0	14.2	42.3	
8.3	30.6	13.3	K*b*
8.8	53.2	14.3	K
9.4	19 12.7	59.3	
8.8	18.6	43.1	
9.5	33.7	47.2	
9.5	42.0	56.8	
8.7	46.0	55.9	*B*
9.0	20 16.3	34.4	*B*b
9.2	23.8	58.2	
9.3	25.6	14.6	
9.5	42.7	21.2	
9.5	48.4	57.5	
8.5	21 34.0	42.1	K
9.5	53.3	12.9	
8.8	22 7.8	52.6	K
9.4	11.6	48.5	
9.5	21.2	52.7	
7.8	23 7.7	54.2	K
9.5	35.6	34.8	
9.5	24 32.7	51.3	
9.5	25 2.6	33.8	B
9.3	10.9	19.2	*b*
10pr.	+ *30.95*	− *2.51*	

2321 — 2380

	9ᵃ	+1°	
m	′ ″	′	
9.5	25 40.6	20.7	
9.5	47.7	56.6	
9.5	26 27.0	5.0	
9.3	41.2	22.0	
9.0	54.5	2.3	
8.8	27 24.9	50.7	K
8.3	25.9	18.3	K
9.0	49.2	10.2	K
8.8	28 28.9	54.9	
9.5	29 23.3	48.5	B
8.9	49 4	22.7	K
8.8	52.9	36.5	
9.5	30 44.3	46.5	
9.4	46.2	35.1	B
9.3	31 22.0	34.8	
9.5	35.9	43.8	
9.5	36.3	8.5	
9.5	53.3	39.3	
9.5	32 57.0	57.6	
9.4	33 13.5	15.7	B
9.4	15.6	41.0	
9.0	18.3	9.5	
9.3	20.5	12.5	
9.3	29.1	53.6	B
9.1	38.6	38.3	
9.2	39.4	48.1	
9.5	39.4	57.1	
8.7	52.6	3.0	K
9.1	59.6	10.9	
9.1	34 3.9	32.0	*b*
9.4	35 42.6	10.2	
8.3	36 11.8	9.5	K*b*
9.5	17.6	9.5	
8.9	56.5	43.8	K
9.4	57.2	13.6	
9.4	37 59.5	55.1	
9.5	38 13.8	6.0	
9.5	39 24.8	37.9	*b*
9.5	40 24.3	4.7	
9.5	34.5	14.1	B
9.5	41 22.5	50.6	
9.1	22.5	20.3	*b*
9.0	26.2	27.3	
9.3	33.9	14.7	
9.3	51.7	16.8	*B*
9.1	42 11.2	19.0	*B*b
9.5	20.8	3.8	
9.5	28.4	56.4	
9.5	43 22.2	44.0	
8.5	29.0	29.3	
9.4	42.3	11.3	
9.3	44 26.1	27.8	
8.3	45 35.5	49.5	K
8.9	50.8	39.4	K
9.0	51.7	30.8	K
9.4	46 7.2	1.9	
9.4	28.6	59.4	
9.5	56.7	28.9	
9.1	57.6	8.5	K
9.1	47 5.9	53.3	
10pr.	+ *30.92*	− *2.70*	

2381 — 2440

	9ᵃ — 10ᵃ	+1°	
m	′ ″	′	
7.4	47 7.5	37.6	K
9.5	34.0	3.7	
9.0	48 8.1	20.5	
9.0	14.0	52.4	K
8.5	49 49.2	54.9	K
8.8	51 25.8	2.4	K*b*
9.0	29.2	42.5	
8.8	31.0	10.6	K
9.5	52 20.3	3.6	
9.5	22.8	44.2	
9.1	53 8.0	32.1	*b*
8.5	54 13.3	50.3	
9.5	20.0	46.0	
9.1	55 18.3	47.5	
8.9	56 12.4	41.3	K
9.2	37.0	16.2	*b*
9.5	58 23.4	53.5	
9.3	31.6	9.1	
9.5	59 6.2	27.8	
9.3	21.6	43.9	
9.0	38.8	38.1	K
9.5	43.1	58.3	
7.5	0 6.4	37.3	K*b*
8.8	24.3	24.8	K
8.2	57.1	18.8	K
7.0	1 13.6	52.2	K
9.5	19.7	24.8	
8.9	36.9	4.6	
9.0	2 31.3	13.4	
9.0	3 23.8	42.5	
9.5	55.1	57.3	
9.0	5 0.7	30.8	K
9.0	5.2	36.2	K
8.2	6 2.5	9.1	K
9.5	15.0	13.9	
9.5	32.4	12.0	
9.5	43.0	50.9	
8.3	7 33.4	31.8	K
9.3	51.9	25.6	
9.2	10 40.6	25.4	*b*
8.8	11 22.3	48.7	K
9.3	12 48.5	2.5	*b*
9.5	13 8.4	18.2	
9.0	43.8	18.7	
8.9	14 37.8	53.6	
8.7	59.9	16.8	
9.5	15 13.7	18.5	
8.5	17.5	53.6	K*b*
9.4	18.6	0.9	*a*
9.3	46.9	34.0	
9.0	16 12.0	3.9	
9.5	49.3	30.0	
9.0	17 45.6	43.7	K
8.7	18 7.8	48.7	K
9.5	38.4	13.4	
9.4	44.2	53.4	
9.5	19 2.9	47.8	
9.4	21.4	54.5	
9.3	23.4	37.1	
8.8	36.5	31.7	
10pr.	+ *30.89*	− *2.92*	

2441 — 2500

	10ᵃ	+1°	
m	′ ″	′	
9.1	19 37.4	32.7	*a*B
9.2	39.4	48.2	
9.5	45.7	23.9	
9.5	20 14.2	14.7	
9.4	48.7	53.2	
8.8	21 4.7	16.1	K
9.5	33.4	37.9	
9.3	59.9	18.0	
9.5	22 38.8	6.3	
9.5	23 4.1	46.3	
9.3	26.7	31.6	*b*
9.5	24 17.7	56.0	
9.5	29.5	13.8	
9.3	25 41.1	59.5	
9.5	26 12.5	43.0	
8.9	54.8	54.8	
9.5	27 36.4	58.8	
9.1	41.8	7.4	*b*
9.5	28 12.4	23.3	
9.5	35.7	34.2	
8.3	42.0	26.9	K
9.3	50.2	59.5	
9.5	29 51.6	21.2	
9.3	30 45.8	18.7	
9.5	31 6.0	34.6	
9.5	32 14.5	14.3	
9.5	29.3	37.7	
8.7	33 21.4	15.9	K
9.2	34 14.8	59.4	*a*B
9.1	25.9	18.5	
7.5	55.4	37.0	K
9.3	35 12.1	55.9	
8.6	36 0.8	21.0	B
9.3	24.9	3.0	
9.2	37 36.5	31.1	
8.8	49.5	16.5	
8.0	38 2.7	45.7	K*b*
9.5	39 10.0	36.5	B
9.4	24.4	34.4	B
9.3	26.3	43.8	B
9.5	40 4.0	20.4	
9.6	4.5	23.1	
8.7	7.2	38.3	K
9.5	15.6	43.4	
9.5	42 10.6	6.6	B
8.3	16.9	42.8	K
8.5	41.8	46.0	K
9.2	47.6	7.1	*a*B
9.3	43 24.6	17.7	B
8.2	43.2	32.5	K
9.3	45.1	27.6	K
9.0	44 18.6	51.9	K*b*
9.3	28.9	0.6	B
9.5	41.7	15.2	
6.9	47.0	47.2	K
9.5	45 35.6	47.1	
9.4	46 5.8	44.2	K
9.3	47 14.8	12.9	
9.5	16.4	17.8	
9.5	37.7	15.0	
10pr.	+ *30.85*	− *3.11*	

2473ᵃ			
9.5	*36*	*15.6*	*48.9*

2501 — 2560					2561 — 2620					2621 — 2680					2681 — 2740					2741 — 2800				
	10°— 11°		+1°			11°		+1°			11°—12°		+1°			12°		+1°			12°—13°		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
6.2	48	14.6	29.7	K	8.7	18	12.9	48.9	K	9.0	44	48.9	3.1		8.2	11	36.0	58.3	K	9.2	35	59.0	56.9	
8.0		44.0	12.0	K	9.1		16.7	54.1	Kb	9.5		53.2	40.8		9.3		40.3	44.3		9.0	36	4.7	36.9	D
9.5	49	25.3	49.2		8.6		37.7	49.8	K	8.7	46	9.8	52.9		9.3		42.6	36.6		9.4		23.2	27.4	B
9.4		32.0	4.8		9.5		59.8	1.8		6.8		25.5	20.7	K	9.3	12	59.0	23.3		9.0		24.7	37.5	K
9.1	50	16.7	3.9	Bb	8.2	19	11.3	50.2	K	9.3		38.6	6.8		9.3	13	8.2	16.7		9.5		48.3	59.9	
9.5	52	20.0	51.1	b	7.7	20	7.7	45.2	K	9.3		43.0	46.6		9.3		22.0	5.3		8.2	37	1.2	18.8	K
8.9	53	12.3	9.0		9.3		15.3	49.2		9.2	47	43.6	22.7	b	9.5		23.9	44.5		9.5		7.7	24.0	
9.5	54	15.9	22.3	B	9.5	21	5.2	20.3		7.8		59.1	53.9	K	9.0	14	37.1	51.3		9.5		29.2	7.7	
9.5		17.4	26.3		8.0		21.2	59.8	K	9.0	48	37.4	47.8		8.5	16	4.6	32.3	K	8.9		53.9	51.6	K
9.5		37.7	33.2		9.1		32.5	52.4		9.5	49	37.0	35.5		9.0		47.5	1.6		8.8	38	10.2	46.2	K
8.8		57.1	37.7		9.0		49.8	31.1		8.8		37.9	25.6		9.0		52.0	31.6		9.5	39	34.6	11.4	
9.1	56	13.7	1.7	b	9.5		58.1	48.5		9.5	50	38.2	57.3		9.3	17	11.8	14.3		9.5		38.0	53.0	
9.5	58	4.5	11.0	B	9.0	22	5.6	0.8		7.3		47.7	40.6	Kb	9.0		39.9	12.2		9.5		58.7	6.7	
9.5		6.8	17.1		9.2		27.0	36.4		9.5		58.1	46.8		8.1		50.1	35.2	K	9.2	40	5.7	14.3	b
9.5		18.7	20.6	B	9.3	23	48.1	52.3		9.2	51	10.0	42.9	a	8.8	18	15.7	18.7		9.4		17.8	28.8	B
9.5		21.8	16.1	B	9.3	24	4.2	16.2		6.8		38.4	20.2	K	8.3		51.7	19.1	Kb	9.2		27.0	59.4	
8.7		24.3	23.4		9.5		30.6	27.3		9.2	52	30.5	42.8	b	9.5	19	2.8	46.5		9.5	41	20.3	55.5	K
9.5		26.1	14.1	B	9.0		46.0	31.1	K	9.3	53	35.2	35.8		9.2		59.3	0.3		8.0	42	38.2	27.5	K
8.0		36.1	59.8	K	9.3		59.1	23.6		9.3	54	14.1	25.2		9.5	20	50.8	29.9		9.3	43	17.2	17.4	
9.4		50.1	32.8		8.5	25	57.8	36.1	B	8.9		21.2	20.8	K	9.3		50.9	24.0	b	9.5		34.0	4.0	
*																								
9.5	59	49.5	4.8		9.3	26	26.3	19.8		8.3		56.7	20.8	K	8.5	21	29.2	56.8	K	8.5		54.8	52.7	
9.5	0	31.4	28.9		9.5	27	8.6	17.0		9.3	56	19.8	9.0		9.5		46.3	59.1		9.0	44	4.7	24.4	
9.5	1	15.6	52.4		9.2		26.2	24.2		9.5		35.8	49.8		9.5	22	49.2	7.8		9.0		14.2	17.8	L
9.3		23.3	2.1		9.5		56.0	57.9		9.5		52.6	49.8		9.0	23	1.8	23.0		9.5		22.7	34.5	
9.5	2	25.5	29.3		9.2	28	11.3	35.9		9.0	57	3.9	30.0		9.3		24.5	40.1		8.8	45	2.9	0.7	Kb
9.5		49.8	31.6		8.9		21.3	0.5	K	9.2		12.4	12.3		8.5		30.2	28.3	L	9.0		41.4	14.2	K
9.5	3	27.8	57.6		9.0		32.6	13.3	B	9.0		14.1	32.6		9.1		47.4	7.3	b	9.5		41.7	6.3	
9.2		42.4	6.3		9.3		44.4	9.3		9.0		16.6	1.9		9.5		47.9	53.5		9.5	46	21.7	7.4	
9.2	4	15.9	24.6	Kb	8.4		56.3	23.6		9.5	58	1.2	41.8		9.0		50.5	53.9		9.5	48	48.2	17.7	
9.0		38.4	0.9		9.5	29	13.6	36.4		9.5	59	2.1	38.3	B	9.5	24	20.5	39.2		9.5		49.7	36.8	b
9.3	5	2.9	30.3		9.0		22.2	28.5		9.5		3.6	32.0		9.5		55.2	13.6		9.5	50	1.0	57.2	
8.4		20.6	8.5	L	9.3		55.7	20.1	B	8.5		18.0	4.0	K	9.5	25	33.7	51.8		9.5	51	6.7	55.5	
8.5		26.2	0.5	K	9.2	30	58.5	18.1		8.8		49.3	42.0		9.5		36.7	20.8	B	8.2		23.2	9.1	K
9.1		35.7	48.1		8.8	31	51.3	45.8	K	8.3		51.1	13.7	K	8.5		44.6	51.4	K	9.5		43.7	46.5	
9.3		49.5	1.5		9.5		59.6	19.1		8.8	0	12.6	31.0	K	9.5	26	11.7	6.7		9.2	52	17.7	5.3	K
9.0	6	11.4	40.5		9.3	32	7.9	11.5		7.5		34.8	26.1	K	9.5		17.9	49.5		7.8		40.7	5.8	K
9.1		40.5	6.8		7.3		58.9	45.3	Kb	9.3	1	16.7	22.7		9.5		19.7	31.0		9.5		40.7	43.4	
9.2		47.8	51.6		9.0	33	4.8	39.4		9.4		43.0	22.1		9.5		21.0	27.2		9.2	53	53.2	16.3	a
8.3		55.2	40.6	K	8.8	34	1.2	45.1	K	9.5		51.2	11.5		9.5		37.9	48.0		8.5	54	37.7	10.1	L
9.0	7	1.1	41.0	K	8.7		15.9	48.3	K	8.8	2	4.1	36.4		9.5	28	22.2	2.1		8.5		52.2	20.9	L
8.3	8	10.8	21.7		9.5		37.3	30.3		9.3		21.4	47.1		8.8		26.2	24.3		9.5		57.7	10.8	B
9.0		12.1	22.5		8.8		41.5	49.3	K	9.5	3	22.9	27.8		9.4		26.2	2.3		9.0	55	0.7	44.1	K
9.5		44.2	8.9		9.5	35	25.5	40.8		9.3		26.2	20.3	B	9.0		44.7	38.9		8.8		21.8	4.3	
9.5	9	13.6	23.9		8.5		51.8	34.0	S	9.2		45.2	59.9		8.7		55.3	50.9	K	9.2	57	6.7	1.2	K
9.3	10	8.9	31.1		9.3	36	42.0	14.6		9.5		57.9	7.0		9.5	29	34.5	51.0		9.5		18.7	14.6	
8.5		21.2	34.8	K	9.5		58.8	6.8		9.0	4	42.1	59.3	K	9.3		40.7	37.5	a	7.7		21.9	4.3	K
9.4	11	2.2	12.2	B	9.5	37	1.7	18.9		8.7	5	40.4	2.0	L	9.2	30	54.2	49.4		9.2		38.7	38.6	b
9.2		4.3	20.9	aB	7.8		41.1	42.1	Kb	9.3		58.7	58.0		8.3	31	7.2	1.0	K	9.5	59	39.2	36.5	
7.8		49.4	30.7	K	9.5	38	32.6	15.6		9.2	6	26.9	38.9	b	9.5		41.2	58.7		7.2		56.7	21.3	Kb
9.5	12	13.7	39.8		9.2	39	6.4	9.4	b	9.5		50.0	55.4		9.2	32	2.0	50.7	Kb	9.0	1	8.7	53.0	K
9.3		30.5	48.9	b	9.5	40	13.6	24.6		9.5	7	9.5	3.9		9.5		28.7	57.0		9.5		35.7	14.0	B
8.1		49.7	4.0	B	9.5		27.9	43.0		9.3		31.9	51.3	B	9.5		35.7	41.3		9.0	2	8.5	32.0	
9.3	14	9.0	44.8		9.5		50.5	34.9		8.7	8	18.2	38.8		9.5		38.7	6.3		9.5		10.2	46.2	
9.2		29.2	5.0		9.6		59.3	4.7		9.5		41.9	4.2		9.5		46.6	53.9		9.3	3	25.9	3.9	
9.3		46.8	42.0		9.5	41	5.0	33.5		9.4		53.5	58.1		9.5	33	5.2	33.3		9.1	4	1.8	51.6	
8.6	15	28.7	42.6	S	9.5		10.3	28.5		7.8	9	34.7	9.0	K	9.3		9.6	4.1		9.3		31.9	35.8	K
9.1	16	5.0	15.3	aB	8.2	42	4.6	24.1	B	9.5		50.9	38.8		9.2		14.6	3.8		9.5	5	40.9	11.5	
9.3		49.7	43.7		9.0		19.4	25.4		9.5		51.4	20.8		9.5		45.7	54.6		9.5	6	48.2	50.6	
9.3		54.3	7.3		9.1	43	0.7	48.7	b	9.3	10	6.6	54.7		8.0	34	39.5	17.7	L	8.9		52.7	59.6	K
9.0	17	22.2	10.6		9.3	44	48.0	4.8	a	8.8	11	31.7	21.4		9.3	35	41.5	3.7		9.5	8	50.2	6.6	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.80	3.24		10pr.		30.77	3.31		10pr.		30.72	3.34		10pr.		30.68	3.34		10pr.		30.65	3.27	

2820°				
9.7	59	36.6	22.4	B

13ᵉ — 15ᵉ **+1°**

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	13ᵐ		+1°			13ᵐ—14ᵐ		+1°			14ᵐ		+1°			14ᵐ—15ᵐ		+1°			15ᵐ		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	10	50.4	3.9	B	9.0	47	58.4	57.1	K	9.5	16	25.2	31.7	B	7.2	39	44.3	34.8	L	9.5	4	27.3	51.9	
8.7	11	1.7	47.9	K	9.0	48	17.7	22.9		9.5	17	21.8	31.3		9.5	40	23.8	46.5		9.4		55.8	0.4	Kb
8.1		31.5	16.0	Kb	9.3		50.8	57.0		9.5		28.3	19.4		9.3		32.2	2.4	*b*	9.5	5	7.5	46.4	
9.5	12	30.7	50.0		8.8	49	2.2	34.1	L	8.8		45.6	2.5	K	9.3		33.7	4.8	B	9.5		11.4	24.4	
9.5		48.7	4.2		5.8		6.6	45.6	Kb	9.5	18	27.2	25.2	R	9.4		36.5	12.5		9.5		37.9	41.2	
9.3	13	35.7	7.0	K	9.5		7.5	11.8		9.0		30.2	49.1	B	9.5		42.3	28.8		9.5		48.6	37.5	
9.3	14	10.9	42.7	*b*	9.3	50	52.5	43.3		7.0		34.3	39.1	L	9.2		50.7	8.5		9.5	6	37.3	17.9	
9.5		19.1	24.6	B	9.5	51	29.5	40.5	B	9.0		40.7	31.8	R	8.4	43	46.4	8.1		9.5	7	27.0	26.0	
9.0	16	13.7	16.3	K	9.5	52	28.2	28.8		9.5		49.2	41.6		9.5	44	47 8	18.3		8.6		31.3	48.9	K
9.0		42.0	57.0		9.0	53	27.0	52.3		9.5		57.3	32.9		9.4		54.3	44.0	*Bb*	9.5	8	0.6	59.2	
9.5	17	34.1	53.6		8.7		51.9	24.0	K	9.5	19	4.3	33.6		8.7	45	14.0	6.4		8.7		33.7	43.1	
9.5		42.9	43.0		8.7	54	1.9	42.4	K	9.3		32.1	8.9	R	9.1		35.2	20.7	K	7.5		34.9	20.3	K
8.0		53.9	36.5	K	9.2		6.5	26.1	K	8.2		38.4	46.4	L	9.3		37.0	4.9		9.5		54.9	27.3	
9.5	19	25.6	6.2		8.1		28.8	6.1	*B*	9.5		43.7	13.8		9.5	46	29.7	44.4		9.5		57.8	52.0	
9.0		37.5	58.7	Kb	9.3		29.5	38.9		9.5	20	4.5	53.1		9.5		32.8	13.1		9.3	9	0.3	42.7	K
9.5	20	22.4	1.4		9.2		34.0	23.2		9.5		7.0	40.2	B	9.5		53.3	59.6		9.3		1.2	48.0	
9.5		30.5	36.1		8.8		35.5	9.9	B	9.4		15.0	55.7	B	9.5	47	1.2	38.8		8.9	10	43.3	20.6	K
9.5		52.7	1.5		9.5		45.5	28.5		9.5		29.0	35.8		9.5		28.4	58.6		9.5		54.2	53.7	
7.1	22	25.1	50.4	Kb	9.5	55	37.9	27.0	*a*	8.9	21	34.8	42.9	K	8.5		30.7	42.6		7.1	11	1.3	27.6	K
8.7		44.2	4.8		9.4		47.9	26.8	K	*9.5	22	3.2	34.2		9.3		49.8	12.8		9.4		17.3	47.7	*b*
9.5	23	44.2	17.0		9.5		54.8	0.0		6.1		29.2	28.0	K	9.2		58.3	53.4	R	9.3		31.3	52.1	
9.2		59.8	2.3	K	9.2	56	27.2	16.8	K	9.2	23	17.0	18.0	R	8.6	48	9.8	18.3	Kb	9.4		49.0	5.0	K
9.3	24	5.8	47.9	B	9.5		51.6	28.5		*8.9		40.4	54.5		9.5		19.2	47.6		9.5	12	4.9	25.5	
9.1		12.8	32.0	K	9.0	58	54.2	39.3	K	*9.2		59.8	33.2	R	9.5		21.0	4.8		9.4		23.0	5.2	K
9.5		40.9	41.3		9.1	59	1.5	9.0	*b*	9.0	26	32.8	29.4	K	9.5	49	37.5	3.7	K	9.5		25.9	28.3	
8.4	26	6.9	42.9	K	9.5		5.6	18.0		9.4		48.0	47.6	B	9.4		50.3	46.5		9.5	13	32.6	56.0	
9.5		7.0	51.1		9.5		10.4	29.8		9.3		55.3	21.7	K	9.3	50	5.7	31.5		6.1		39.6	14.4	Kb
8.5		43.9	14.6	K	9.5		31.5	7.6		9.0	27	46.3	19.9		9.5	51	12.3	13.5		9.5	14	21.2	30.7	
9.5	27	25.2	10.0		8.1		32.2	37.6	K	9.5		58.8	47.6		9.0		33.8	34.2	K	9.5		37.6	31.0	*R*
9.5	28	3.5	21.9		8.8	0	51.4	4.1	Kb	9.5	28	11.9	2.0		9.3	52	0.7	46.7		9.5	15	17.6	46.4	
9.5		37.4	56.4		8.8	1	59.2	54.3	K	9.5		24.3	40.6		9.2		8.7	42.3	K	8.7		26.3	57.0	K
9.3	29	55.6	26.8	B	9.2	2	21.8	55.6	K	8.8		50.8	57.5	K	8.3		51.7	6.4	L	8.9	17	19.9	10.6	K
8.9	30	57.9	12.4	*B*	9.0		29.8	9.0		9.0		55.1	0.5	R	8.5	53	8.8	29.4	K	9.5		30.0	10.8	*a*
8.2	31	9.1	59.9	L	9.4		34.6	55.0		9.1	29	10.3	40.6	K	9.5	54	12.8	48.8		8.8		43.3	31.5	L
8.8		44.9	27.4		7.0	3	25.6	29.5	K	9.1		22.2	17.5	*b*	8.5		21.2	16.9	K	9.5	18	19.0	55.5	*R*
8.0	32	11.9	50.3	Kb	9.5	4	10.4	7.1		9.3		26.8	46.9	K	8.6	55	12.2	36.3	K	9.5		40.3	12.0	
9.5		16.7	25.4		8.8		24.9	23.0	K	8.6	30	9.0	3.3	K	9.3		20.5	1.8		9.5		59.3	33.6	
9.3		45.5	30.8		8.5	5	26.7	1.5	K	9.5		41.9	3.5		8.0	56	0.8	26.9	K	9.5	19	3.3	9.2	
8.0	34	58.5	43.1	K	9.5		39.5	57.3	B	9.0		53.3	30.5	K	9.3		57.0	39.1	B	9.2		30.9	32.1	
7.7	37	4.9	25.7	L	9.0		53.2	42.0	*R*	9.5	31	40.2	27.3		9.3	57	12.3	27.5	K	8.7	20	2.3	21.0	K
9.5		22.5	55.7		9.1	6	17.9	22.5	Kb	9.0	32	5.8	58.2	K	8.7		13.1	12.2		9.5		20.8	55.1	
9.5		54.3	1.1		9.5		43.9	34.0		9.5	33	4.8	0.1		8.5		54.6	4.2		9.5		45.6	29.0	*R*
9.5		59.0	54.6		9.5		50.1	2.1		9.5		34.7	38.7		9.0	58	4.8	9.8		9.4	21	8.7	42.9	B
9.2	38	0.9	15.2		9.5	7	2.6	25.6		8.1	34	21.1	1.5	Kb	9.5		13.4	2.1		7.9		10.6	6.2	K
8.6		43.4	4.6	Kb	9.5		42.2	38.3		8.8	35	10.7	54.5	K	9.5		24.6	41.8		9.5		35.3	32.7	
9.5		48.2	45.8		9.5	9	18.6	28.2		9.0		50.3	57.0	*R*	9.5		25.6	48.5		9.5		44.5	31.1	
8.6	39	3.0	10.6	K	9.5		21.2	42.0		9.5	36	24.8	30.8		9.4		27.0	8.0	*a*	9.0		48.7	57.1	
8.8		11.0	25.4		9.0		43.9	44.1	Kb	9.1		53.2	45.7	K	9.2	59	31.3	35.2	K	8.9	22	22.0	39.8	
8.9	40	11.6	53.2		9.5	10	8.6	39.3		9.5	37	9.3	31.9		8.8	0	46.1	52.6	K	9.5		52.8	5.4	*a*
9.0		24.9	56.8		8.4		43.4	49.6	K	9.5		39.3	51.0		9.5		47.9	4.5		9.5		55.5	42.5	
8.6		31.4	10.4		8.5	11	26.3	55.3	K	9.1		43.2	44.0		9.2	1	16.3	25.8	*b*	9.1	23	53.5	20.7	
9.3	42	16.2	36.9	*b*	9.5		50.8	52.6		6.5	38	9.7	18.7	K	9.5		33.4	5.6		7.8	24	20.5	23.4	Kb
9.5	43	15.5	53.5		6.3	12	18.8	2.9	Kb	9.5		31.0	7.0	B	9.5		55.6	30.6		9.3	25	30.0	44.7	Kb
9.0		40.5	24.7	Kb	9.5		25.9	52.5		9.3		36.3	44.3		9.4		59.0	8.7		9.5		40.5	20.0	
8.6		46.9	16.3	K	9.5		46.2	51.1		9.5		44.0	11.7	B	9.5		59.1	56.4		9.5	26	2.5	13.0	
9.5		56.9	58.3		9.4	14	22.2	26.4	Kb	9.3		44.3	23.1		8.3	2	18.3	16.2	L	9.5		5.0	52.0	
7.7	45	15.9	33.0	K	9.8		58.2	12.8	*R*	9.5		47.0	2.3	B	9.5	3	37.3	52.0		9.5		21.5	28.3	
8.7		26.5	30.2	K	9.5	15	20.6	19.5		9.5	39	3.2	32.2		9.5		46.5	4.4	*Rb*	9.5	27	43.0	13.4	*a*
9.5	46	12.5	53.0		9.5		47.9	22.2		9.5		22.7	50.6		9.3	4	3.6	43.3		9.5		52.0	14.0	*a*
8.7		15.6	38.9	K	6.5		51.1	55.6	K	8.8		39.6	59.8		9.5		24.3	8.8		8.7	28	13.3	55.8	Kb
10pr.		+ 30.59	− 3.09		10pr.		+ 30.55	− 2.88		10pr.		+ 30.51	− 2.67		10pr.		+ 30.48	− 2.44		10pr.		+ 30.45	− 2.21	

2939ᵐ				
9.5	21	42.2	57.8	B
2943ᵐ				
9.5	23	42.2	16.8	B

3101—3160

	15ᵐ	+1°	
m	′ ″	′	
7.1	28 28.5	42.6	L
9.3	40.5	29.4	R
9.0	57.3	36.7	K
9.3	29 20.5	27.3	K
8.7	30 16.9	53.6	K
9.5	37.7	9.6	
8.3	57.0	25.1	K
9.3	31 7.0	37.7	K
9.4	47.2	0.8	K
8.2	33 0.8	56.2	K
9.5	11.7	54.4	
9.5	34 5.5	43.2	
9.5	16.0	23.4	
9.5	51.5	49.2	
9.5	52.2	8.0	
9.2	35 12.5	21.0	b
9.5	13.0	39.0	
9.5	25.4	9.3	
9.5	26.5	3.6	
9.5	39.0	15 0	
9.2	36 53.4	4.0	K
9.5	37 28.9	7.8	
9.5	54.5	23.5	
8.7	38 6.7	58.9	K
6.7	17.0	19.0	B
9.3	29.5	20.4	
8.7	41.3	54.1	K
8.8	47.9	7.3	
9.5	39 21.5	12.4	
9.5	49.5	38.0	
7.0	40 6.3	59.8	K
9.4	18.4	8.8	
9.2	29.3	8.3	b
9.3	41 36.0	58.9	R
9.5	42 53.7	3.8	
9.5	55.2	9.1	
9.5	44 3.5	34.6	
8.8	45 1.6	9.8	
9.0	34.0	30.4	K
9.5	46 6.8	40.7	
9.5	21.5	43.4	
9.0	47 25.2	25.8	K
9.2	34.5	52.7	b
9.5	48 33.7	38.4	
9.5	49.5	37.3	
9.4	49 0.4	41.6	B
9.5	43.0	27.0	
9.5	50 40.0	12.7	
9.5	55.4	1.5	
9.5	57.6	9.1	
7.5	51 42.8	0.1	K
9.1	52 0.0	5.3	K
9.5	28.5	36.0	
7.4	39.1	2.1	Kb
9.3	54.0	18.2	a
9.2	53 17.5	14.4	K
9.5	54.5	24.5	
9.5	54 24.0	28.6	
9.5	56 37.5	35.2	
7.2	57 7.6	4.0	K
	+	−	
10pr.	30.43	1.92	

3161—3220

	15ᵐ—16ᵐ	+1°	
m	′ ″	′	
9.5	59 3.0	58.5	
9.5	17.5	19.3	
9.5	52.9	57.3	
9.5	0 32.5	40.2	
9.4	40.5	12.7	
9.2	44.2	32.9	b
9.3	1 52.1	14.1	K
7.0	2 19.0	11.4	K
9.5	38.5	31.5	
7.0	51.9	58.6	K
9.5	3 16.0	39.1	
9.3	4 22.0	10.5	B
9.1	39.3	2.4	Kb
9.4	5 10.9	7.7	
9.5	23.2	46.0	
9.0	38.0	1.4	K
9.5	6 5.3	28.5	
9.1	14.7	1.9	K
9.3	27.0	52.3	
9.2	35.5	45.7	
9.0	46.5	53.2	K
9.5	50.8	22.1	
9.4	59.9	59.2	
9.2	7 0.0	34.6	
9.1	34.0	20.6	
9.3	59.8	53.2	
9.5	8 41.4	13.0	B
9.3	9 9.5	56.8	
9.2	23.5	13.4	
9.0	29.8	38.8	
9.2	30.5	33.2	
9.1	10 5.0	52.0	K
9.4	7.2	33.9	
7.4	23.5	51.4	K
9.5	35.0	31.3	
9.3	11 3.3	14.7	aB
9.2	4.5	13.7	B
9.5	4.7	13.2	
9.3	11.2	20.8	K
9.2	19.5	4.4	a
9.4	24.2	51.7	B
9.4	49.9	55.3	B
9.5	55.5	27.7	
9.5	12 28.5	10.0	
8.9	29.6	50.5	Kb
9.1	51.9	36.4	aB
9.5	13 0.5	40.2	
8.7	2.1	15.5	
9.5	35.6	5.8	B
9.5	14 14.5	46.2	
9.4	19.8	39.3	
8.2	27.8	33.1	B
9.5	30.0	10.2	
9.5	31.8	25.8	B
5.0	44.9	22.0	P
9.1	50.2	55.7	K
9.5	15 16.3	54.8	
9.3	22.1	9.6	
9.5	24.6	41.4	
8.8	16 4.5	53.4	K
	+	−	
10pr.	30.41	1.56	

3221—3280

	16ᵐ	+1°	
m	′ ″	′	
9.0	16 35.5	25.9	
9.5	40.2	55.2	B
9.5	57.5	11.5	
8.5	17 0.0	36.1	K
8.5	14.0	30.8	K
9.5	49.8	51.4	
9.2	57.5	19.4	
8.8	57.5	33.4	K
9.2	18 2.1	4.3	a
9.5	9.0	49.0	
9.2	22.3	2.6	K
9.5	43.5	13.1	
9.3	19 5.5	16.2	
8.8	12.2	6.1	K
9.0	30.0	21.1	K
9.4	58.2	15.3	B
9.1	59.0	41.9	K
*9.1	20 22.0	23.9	K
8.3	21 15.0	54.4	K
9.2	55.0	11.3	b
9.5	22 1.2	11.4	
9.5	50.0	29.8	
9.3	23 2.0	58.7	a
9.0	4.9	59.7	B
9.3	53.0	47.5	
8.0	24 1.5	37.1	B
9.5	43.0	32.9	
9.5	25 54.5	48.3	
9.5	56.5	47.5	B
9.5	58.0	10.4	
9.5	26 3.5	41.6	
9.2	15.0	48.8	K
9.5	17.9	55.2	B
9.2	21.0	24.3	
8.5	41.0	43.5	K
9.4	52.0	28.1	
9.5	54.4	8 8	
9.5	27 10.0	30.6	
9.4	19.4	8.7	
9.3	23.3	17.8	B
9.4	34.8	17.1	B
9.1	28 30.7	31.2	L
8.0	44.0	40.3	L
9.5	55.5	59.7	
9.5	29 25.5	55.3	
9.5	28.6	2.0	
9.5	46.1	1.0	
9.5	30 8.7	45.1	
9.0	20.3	52.5	K
9.0	43.3	56.7	K
9.0	55.5	37.4	K
9.3	31 26.9	1.6	B
9.4	33.8	55.1	
9.2	36.0	30.5	K
9.2	37.3	24.5	K
9.2	40.8	3.1	b
9.5	32 17.5	26.7	
9.4	21.3	49.0	
9.4	21.4	41.7	B
9.3	27.0	32.5	B
	+	−	
10pr.	30.40	1.33	

3281—3340

	16ᵐ	+1°	
m	′ ″	′	
9.5	32 38.5	47.1	B
9.5	49.0	47.6	B
9.3	50.0	43.7	
9.4	33 24.5	12.6	
9.5	50.3	59.0	
7.3	57.0	30.4	K
9.4	34 5.7	51.4	
9.3	8.7	35.7	K
9.5	17.5	45.4	
6.5	23.5	26.7	K
9.3	34.6	17.0	
9.4	39.9	8.9	
8.6	46.0	31.3	K
8.8	51.0	44.5	K
9.5	37 3.6	38.1	
9.5	32.8	16.2	
9.5	37.5	48.9	
7.0	38 9.0	16.9	K
9.5	19.0	5 9	
8.8	34.0	14.9	K
9.5	39 25.5	28.1	
9.3	37.7	14.1	K
9.2	42.0	58.8	
8.9	40 8 0	42.7	
9.2	12.5	45.8	
8.7	38.3	29.1	K
9.5	46.0	8.3	
9.3	46.5	37.5	
8.0	52.5	20.1	K
9.3	41 0.0	52.9	
9.0	56.0	26.0	
9.5	42 0.0	51.3	
7.7	4.5	9.4	L
9.5	16.5	45.3	
9.5	38.1	33.9	
9.1	43.0	12.9	
9.0	43 13.2	27.0	K
9.5	33.0	41.3	
9.3	38.3	58.2	
9.5	48.1	9.6	
8.9	53.7	38.5	K
9.2	44 4.0	22.8	K
6.0	5.0	28.0	K
9.4	31.7	1.8	
9.5	40.0	20.0	
9.5	53.3	42.3	
9.5	55.3	46.5	
9.3	45 8.3	36.7	
9.3	9.2	59.4	
9.5	22.8	4.7	
9.5	38.9	50.2	
8.2	46 3.2	35.5	K
9.4	22.4	26.1	
9.2	36.5	1.9	
8.7	45.7	21.8	L
9.3	53.5	47.1	
9.5	54.9	51.5	B
9.3	47 2.6	50.2	
9.0	29.1	40.9	K
9.5	36.8	56.5	
	+	−	
10pr.	30.39	1.13	

3341—3400

	16ᵐ—17ᵐ	+1°	
m	′ ″	′	
9.5	47 41.5	1.0	
9.5	46.3	48.9	
9.5	59.8	1.8	
9.5	48 5.0	7.7	
9.5	18.7	32.6	
8.0	45.0	39.4	K
8.8	49.3	20.8	K
8.7	49 0.1	52.9	L
9.5	17.6	12.7	B
9.5	32.8	31.3	
9.1	34.7	29.5	K
9.5	51.6	29.8	B
9.3	50 58.4	59.3	
8.9	51 18.1	53.6	K
9.5	28.7	30.9	
9.3	50.3	12.2	
8.9	52 44.7	8.7	K
9.0	55.3	20.5	
9.3	57.5	49.9	
9.5	53 39.7	11.2	
9.2	41.0	29.0	K
9.2	43.6	5.1	K
9.1	51.7	42.6	K
9.1	57.3	28.8	K
9.3	59.0	55.4	
9.3	54 20.9	51.5	
9.2	55 12.2	57.0	Kb
9.2	24.8	8.5	K
9.5	57 1.4	53.3	
9.5	2.6	0.7	B
9.3	14.7	18.8	
9.5	27.0	44.3	
9.1	46.1	59.3	R
9.5	58 11.7	17.0	
9.5	21.3	54.4	
9.5	30.0	16.0	
9.5	32.4	57.6	
9.5	48.0	14.9	
9.5	51.3	19.0	
8.5	59 22.6	12.7	
9.4	31.7	46.1	
9.0	36.3	30.2	
8.8	41.7	59.8	K
9.5	0 2.3	33.0	
9.0	13.0	54.0	K
9.5	28.7	30.5	
9.0	51.7	55.2	K
9.1	55.0	16.6	
9.0	1 21.0	46.1	K
9.3	35.6	8.0	K
9.5	2 3.5	8.0	
9.5	24.0	34.3	
9.5	24.9	54 4	
9.0	27.0	18.7	K
9.5	3 7.3	43.7	a
9.0	12.7	57.5	K
8.9	42.3	45.4	K
9.5	4 23.0	12.5	
9.3	5 0.6	37.0	
8.8	56.7	26.0	
	+	−	
10pr.	30.38	0.91	

3237ᵃ				
9.7	20	8.8	21.8	B

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	17ᵃ		+1°			17ᵃ		+1°			17ᵃ		+1°			17ᵃ—18ᵃ		+1°			18ᵃ		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	7	27.9	4.8		9.5	27	26.1	36.5		9.5	42	39.4	46.5		9.3	57	33.5	36.7	B	9.5	9	38.8	20.1	
9.5		28.8	38.5		9.1	28	14.9	14.3		9.0	43	1.1	33.7	B	9.5	58	1.0	51.3	B	9.3		51.1	50.2	B
9.5		38.1	57.5		7.7		28.5	5.7	K	8.4		3.2	37.9	B	8.8		3.1	8.4	B	9.5		58.0	15.4	
9.4	8	7.3	8.9		9.5		28.9	29.6		8.2	44	2.3	34.4	K	9.0		8.8	24.8	B	9.5	10	16.0	38.9	
9.5		31.0	40.6		9.5		47.0	6.8		7.5		39.2	8.9	K	7.8		29.0	58.8	B	9.5		48.9	32.8	
9.5		32.4	34.5		9.5		57.0	25.1		6.8		44.7	8.9	K	9.3		41.8	19.5	B	9.3	11	19.4	18.7	
9.5		46.2	4.6		7.9		59.3	19.3	K	7.8	45	14.3	46.5	R	8.4		49.1	8.4	K	8.8		45.3	23.0	
var	9	11.3	22.6	K	8.9	29	5.8	52.9	R	6.0		15.3	21.2	K	9.4		49.2	27.3		9.5		58.2	33.8	B
9.0		29.6	50.0	K	9.1		24.5	4.2	K	9.1		34.7	15.3	K	8.0		53.2	34.5	Rb	9.5		58.3	55.6	
9.5		53.2	0.7		9.5		24.6	14.0		9.4		42.8	13.5	aB	9.4	59	1.0	24.7	B	9.4	12	2.1	39.2	
6.8	10	17.8	55.0	K	9.5	30	7.9	2.2		9.0		44.9	8.4	K	9.5		8.3	19.5	B	9.4		30.9	40.7	
9.3		48.4	23.7		8.8		25.8	20.2	K	9.4		48.4	23.7	B	9.5		9.8	15.0		9.4	13	42.2	21.3	
9.5	11	1.9	53.2		9.3		26.6	46.9	R	9.5		52.6	21.9		8.8		16.9	34.7	Rb	9.3	14	10.5	54.6	
9.5		8.4	13.4		9.3		39.9	49.0		9.5	46	24.8	24.4		9.4		19.8	6.7		9.5		16.5	43.5	
8.5		22.5	9.0	Kb	9.5	31	28.1	51.5	B	9.5		50.3	47.6		9.5		30.8	45.6		8.5		25.2	2.9	K
9.5		54.1	57.4		9.4		38.8	54.5	B	9.3	47	9.0	13.8	K	9.5		54.6	8.1		9.5		53.5	35.6	
var	12	11.7	40.3	B	9.3		45.3	3.3		9.4		58.2	30.3	B	9.5	0	1.1	45.1		9.4		56.2	38.5	
9.3		35.8	49.4	B	9.5		57.9	14.0		9.3	48	8.9	3.8		9.4		9.2	25.5	B	9.5	15	22.0	54.5	
9.5		46.5	50.9		9.3	32	19.6	14.1		9.4		25.6	1.0		9.5		33.2	17.2	B	9.5		49.8	58.7	
9.5		48.3	43.5		9.5		34.5	8.4		9.2		39.9	19.4	aB	9.2		51.4	17.8	aB	9.3	16	0.2	40.2	
7.2	13	48.8	35.4	K	9.2		41.9	49.0	K	9.0		46.0	27.5	B	9.5		52.9	52.7		9.4		21.9	44.2	
7.8		54.1	43.1	Kb	9.5		47.8	59.7		9.3		50.4	10.5		9.5	1	27.3	39.5		9.3		31.5	42.6	
8.5	14	59.4	34.4	K	9.5		49.3	44.5	a	9.5	49	1.6	53.2		9.5		29.8	25.6		8.0		42.8	25.6	L
9.3	15	28.3	29.8		9.0	34	21.9	13.0		9.3		12.6	4.3		7.0		34.1	58.5	K	9.4	17	1.5	23.9	
9.3		33.5	1.4	K	9.5	35	23.8	53.9		9.4	50	24.1	53.2	R	8.9		44.6	54.1	K	8.9		55.6	10.0	
9.5		36.4	9.9		9.1		42.4	25.8	b	9.5	51	4.8	35.5		9.3	2	15.8	6.2	a	9.2		59.7	15.5	a
8.3	16	10.8	37.9	Kb	8.3		46.9	48.7	K	9.5		4.9	7.3	B	9.3		26.5	44.7		9.0	18	14.9	30.3	
9.5		15.1	57.0		8.8	36	6.6	8.4	K	9.5		26.9	1.5		9.5		39.9	53.3		8.8		26.7	16.4	Rb
9.5	17	7.5	0.3		9.5		46.9	6.3		9.1		36.8	56.3	aB	9.3	3	8.1	44.5		8.9		30.3	56.9	
9.1		34.9	16.4		9.5	37	2.7	58.1	B	9.5		44.0	22.0		9.4		18.0	56.2		8.5		39.9	37.0	K
9.5		56.2	6.0		9.2		18.1	52.1	R	9.5	52	7.8	16.8	R	9.3		38.8	49.7		9.1		42.2	30.2	K
9.2	18	26.3	24.7	ab	9.5		46.8	46.2		9.3		8.6	34.1	R	8.1		53.3	57.2	Kb	9.4	19	27.7	17.1	
9.4		29.6	57.7		9.3	38	12.3	23.7	R	9.3		21.9	40.6		9.4	4	1.9	7.1	R	9.5		33.8	9.1	B
9.5	19	17.9	50.8		9.5		26.6	45.2	B	9.3		27.3	22.7		8.7		7.4	5.5	K	9.5		35.4	26.7	B
9.5	20	6.8	43.8		9.4		30.5	38.4		9.1		55.1	6.1		8.3		34.2	46.3	K	9.5		39.0	25.1	
9.4	21	20.8	22.5	B	9.5		34.0	53.9		8.0		59.4	37.2	K	8.2		47.3	37.8	K	8.8		51.3	2.0	K
9.5		22.3	9.3	B	9.5		45.5	41.3		8.7	53	55.4	45.4	R	9.4		47.7	19.5		9.4	20	4.2	41.1	
9.5		25.9	36.8	B	8.8		47.3	31.7	K	9.1	54	19.8	54.3		9.5		53.2	55.6	B	8.5		8.0	25.5	K
9.3		32.9	39.3	B	9.0		48.9	24.7	K	9.3		21.8	33.0		9.4		54.3	1.7	B	9.3		15.1	22.0	
7.8		50.5	4.1	Kb	9.3	39	1.4	25.8	a	4.5		24.2	18.7	L	8.4		59.2	52.1	B	9.5		32.3	18.9	B
9.5	22	13.5	3.0		6.8		2.9	7.2	Kb	9.5		25.5	3.8		9.4	5	0.4	54.8	B	9.5		36.5	24.3	
9.3		16.4	34.1		8.7		27.0	35.8	R	9.3		30.0	17.2	a	9.5		32.6	7.0	B	9.4		47.1	22.9	
8.0		17.1	40.5	B	9.3		40.1	58.9		9.4		57.7	57.6		9.2		34.9	43.4		9.0		52.3	55.1	K
9.5		48.0	9.7		8.5		55.5	53.3	K	9.5	55	9.6	9.8		9.4	6	10.0	43.2		9.5	21	9.9	40.1	
9.4	23	6.5	56.0	B	9.5	40	3.4	37.2		9.0		24.0	37.0		9.4		44.3	58.0		9.5	22	3.6	32.6	
9.0		10.9	20.6		9.0		9.2	20.7	B	8.7		30.0	36.2		9.5	7	7.1	13.9		9.5		5.5	7.5	B
9.3		26.2	2.8		9.5		13.8	5.6	R	9.2		39.3	50.9	aB	9.4		12.5	16.2	B	9.5		8.7	2.9	
8.2		30.3	42.0	B	8.8		17.9	49.7	K	8.7		49.7	8.1	K	9.5		19.4	51.8		9.3		34.6	37.4	
7.5		30.6	15.0	L	8.2		37.0	36.5	R	9.3	56	7.0	56.7		8.3		25.5	43.0		8.0		36.8	5.2	K
7.2	24	11.8	47.0	K	8.7		41.9	39.3		9.5		31.7	57.1		9.3		28.8	17.4		9.4		36.9	52.7	
8.7		28.5	57.1	K	8.7		45.3	29.6		9.5		33.1	32.7		9.3		29.0	14.4		9.5		38.2	52.6	
9.3		39.2	24.4	B	8.8		52.8	25.7		9.4		33.4	35.7		8.8		36.4	6.4	K	9.4		39.6	34.8	
9.5		42.3	17.2		9.0	41	2.1	6.1		9.3		40.8	55.5		8.4	8	9.0	18.6		9.5		49.4	14.1	
9.5	25	29.3	41.4		9.5		4.4	15.7		8.5		41.9	50.2	Kb	9.3		9.9	7.3		9.1	23	3.6	7.7	K
9.5		34.4	12.0		9.3		21.9	39.3		9.3		47.6	2.4		9.5		51.8	52.1		9.4		9.0	48.5	
9.3	26	38.0	6.7		8.5		22.8	13.0	S	7.7	57	11.4	14.0	K	9.5		58.7	54.6		9.5		14.3	55.8	B
9.2		39.0	51.1	b	8.5		25.6	49.0	K	9.4		13.6	57.8	B	9.4		59.9	19.3		9.5		37.3	55.5	B
9.5		40.5	7.4		9.2		32.5	14.3	aB	6.5		18.4	55.5	K	9.5	9	8.7	24.2		7.9		37.5	17.5	K
9.5		44.1	56.8		8.8		51.5	15.2		9.5		23.9	42.2		9.4		9.1	34.5		9.5		45.5	3.7	
9.5		57.3	56.1		8.8	42	30.9	48.0		9.4		27.9	40.7		9.3		25.5	5.5		8.3		48.3	21.3	K
10 pr.		+ 30.38	— 0.61		10 pr.		+ 30.37	— 0.33		10 pr.		+ 30.37	— 0.12		10 pr.		+ 30.37	+ 0.04		10 pr.		+ 30.37	+ 0.28	

3701 — 3760

m	18°	+1°	
9.5	23′ 59.9	33.0	
9.2	24 5.5	30.9	aB
9.1	19.7	47.9	
9.3	35.7	11.8	B
9.5	57.8	46.4	
9.4	25 13.2	59.4	
9.5	13.3	19.5	B
9.2	26.4	56.9	
9.3	33.8	29.3	
9.5	41.7	34.7	
8.5	55.3	44.8	Kb
7.6	26 12.1	48.1	K
9.5	24.1	0.0	
8.4	38.1	10.9	K
9.5	48.8	21.7	
9.5	50.7	41.3	
9.3	58.7	28.6	
8.3	27 15.5	58.4	B
9.4	35.6	22.1	
9.5	43.7	11.1	B
9.5	28 6.0	53.0	
9.5	21.3	33.3	
9.3	23.3	9.2	
9.5	42.5	52.1	
9.5	44.6	57.6	
9.2	29 35.0	25.9	K
9.5	48.2	15.4	
9.4	30 1.4	4.7	
8.7	16.7	36.6	K
9.2	27.6	14.2	
9.1	31 12.7	5.0	
9.4	13.3	55.4	
9.0	15.2	13.0	
8.5	16.9	57.3	K
9.5	29.6	23.5	B
8.6	35.6	21.3	
8.8	42.0	23.9	B
9.3	51.4	16.2	
9.4	32 6.2	52.5	
8.6	18.1	18.9	
8.7	19.8	10.3	
9.5	38.6	46.2	B
7.8	42.7	9.7	Kb
9.5	53.2	41.8	
9.6	33 17.2	57.9	a
9.1	36.3	57.4	a
9.5	46.1	38.9	
8.9	53.3	53.6	
9.5	57.7	33.7	
9.4	34 6.2	19.8	
9.3	8.1	14.6	
9.5	20.8	43.8	
9.5	24.7	33.5	B
9.5	53.6	22.2	
9.0	53.6	4.6	
9.4	54.8	11.6	
9.5	35 1.3	1.8	
9.1	13.7	33.0	Kb
9.2	45.0	15.6	
9.4	36 41.1	47.7	
	+	+	
10 pr.	30.38	0.45	

3761 — 3820

m	18°	+1°	
9.5	36′ 41.6	53.1	B
9.5	47.8	27.4	
8.2	37 18.4	44.8	L
8.5	19.0	58.7	K
9.5	27.9	46.8	
5.0	31.2	55.1	K
8.7	48.0	54.9	K
9.2	53.0	55.1	a
9.5	38 7.6	32.1	
9.3	14.1	33.5	a
9.0	17.2	33.0	
8.7	30.1	54.1	K
7.7	36.7	10.2	B
9.5	39 8.2	39.5	
9.5	12.6	37.1	
9.5	19.1	24.7	
9.5	35.3	58.8	
9.5	48.1	18.6	
9.5	49.5	32.6	
9.3	56.3	27.3	
8.6	57.2	35.3	L
9.5	57.3	5.0	
8.1	40 18.9	36.9	L
9.1	47.0	54.2	
9.4	47.7	20.0	
9.5	55.6	4.7	
9.3	41 0.6	22.9	
9.2	30.7	34.1	
9.2	32.5	22.0	b
9.5	41.1	5.2	
9.5	57.8	36.6	
9.4	42 13.5	55.2	
9.4	40.6	18.4	
9.4	43 15.9	30.7	
9.5	37.8	21.0	
8.6	44 8.4	14.2	K
9.5	13.5	43.7	
9.5	38.9	25.4	
9.4	40.2	13.2	B
9.0	54.3	42.7	
9.5	45 4.8	52.1	
9.5	22.4	57.3	
7.8	48.2	35.1	L
9.5	46 0.9	0.8	
9.4	1.0	32.6	
9.5	3.3	22.1	
9.3	22.6	52.1	
9.2	23.0	33.8	
9.5	29.3	7.8	
9.3	43.9	2.0	
9.4	45.1	26.6	
9.5	47 7.5	35.8	
9.5	8.1	31.7	
7.7	11.6	43.7	L
7.7	17.4	43.4	L
9.1	28.8	1.6	K
9.4	34.0	4.5	B
9.5	37.9	4.6	B
9.5	52.1	28.9	B
9.5	48 34.7	44.3	
	+	+	
10 pr.	30.38	0.61	

3821 — 3880

m	18°	+1°	
9.5	48′ 42.2	53.4	
9.5	49 4.7	58.9	
9.1	26.8	55.6	aB
9.2	30.9	42.6	
9.1	38.9	35.3	
9.5	43.3	21.1	
7.7	43.3	18.8	B
9.2	58.3	9.1	
9.1	50 13.1	27.7	
8.9	16.4	40.2	
9.5	18.0	26.8	
8.9	18.9	2.0	
9.5	34.1	49.7	
9.5	42.0	52.9	
9.3	44.4	24.6	
9.5	52.0	14.4	
7.0	51 3.7	0.6	L
9.5	7.2	27.7	
9.2	18.4	8.4	
8.5	19.5	43.4	
8.6	26.2	55.8	
9.5	36.6	44.2	
8.2	52 2.6	12.8	L
9.4	3.8	37.3	B
9.5	6.7	0.1	
9.5	13.4	11.8	
9.5	24.8	30.3	
9.5	53 3.6	33.8	
8.1	4.4	32.7	K
9.4	27.0	3.3	B
8.4	29.4	11.0	Kb
9.4	38.3	7.7	
9.5	47.5	1.0	
7.2	54.0	49.9	B
8.1	54 0.1	32.6	B
7.8	5.6	5.1	K
9.1	16.2	56.9	
9.5	23.0	35.1	
9.5	32.7	57.7	
9.0	36.2	15.9	Kb
8.2	55 30.2	33.8	K
9.5	43.4	58.9	
9.5	53.0	17.8	
8.9	56 3.9	48.3	
6.0	12.5	36.4	K
9.5	18.6	54.4	
9.1	25.6	5.6	aB
9.5	39.5	39.5	
9.4	42.6	1.5	
9.2	44.6	17.2	
9.3	47.2	11.4	
9.5	56.2	9.3	
9.5	58.6	24.2	
8.4	57 13.4	46.3	B
9.4	16.4	53.0	
9.1	17.1	46.0	
8.7	17.7	5.4	K
9.0	18.3	35.3	
8.7	26.4	8.5	K
8.8	45.2	23.8	
	+	+	
10 pr.	30.38	0.77	

3881 — 3940

m	18°—19°	+1°	
9.2	58′ 3.7	0.5	
9.5	10.6	0.5	
9.3	35.2	36.6	
9.5	42.8	44.0	aB
9.5	53.2	8.5	
9.4	53.6	22.9	
9.5	59 12.6	8.2	
9.4	14.8	4.1	
7.7	15.9	18.1	K
9.5	21.3	31.4	
9.3	24.1	31.8	B
9.5	45.0	18.9	
9.0	45.6	12.5	K
9.5	55.4	0.3	
9.1	0 3.9	53.7	a
9.0	22.0	0.1	K
9.1	25.8	0.3	K
8.1	26.3	33.6	K
7.5	52.5	4.7	K
9.5	1 13.1	24.4	
9.4	16.7	58.4	
9.5	18.6	43.4	
9.1	23.0	35.7	K
9.5	30.5	48.2	
8.0	40.4	7.7	K
9.5	43.8	28.0	
9.5	56.9	51.5	
9.3	59.3	13.0	
9.2	2 0.9	0.3	K
9.5	8.6	46.0	
8.7	20.2	0.4	Kb
9.5	45.3	5.2	
9.5	46.2	32.1	
9.4	3 16.1	40.2	
9.5	16.8	34.0	B
9.3	35.9	11.4	
9.3	51.1	38.6	b
9.5	4 9.0	32.4	B
9.5	10.1	1.0	
9.4	10.8	46.9	
9.5	11.9	41.1	
9.4	12.4	50.4	aB
9.5	48.3	8.8	
9.4	49.6	59.9	
9.5	50.1	54.6	
9.5	56.9	46.1	
8.8	5 1.2	7.8	B
9.5	1.5	54.5	
9.5	39.7	4.1	
9.2	45.2	39.9	b
9.2	54.6	20.1	K
9.4	6 3.2	20.2	K
9.5	12.3	28.8	
9.5	14.0	15.8	
9.5	15.2	57.3	
9.4	56.8	40.2	
9.3	59.5	6.7	K
9.5	7 7.3	50.8	
9.4	7.5	57.6	B
8.9	15.7	39.2	B
	+	+	
10 pr.	30.38	0.90	

3941 — 4000

m	19°	+1°	
9.5	7′ 32.9	55.6	B
9.4	36.3	54.6	
9.1	50.2	9.7	Kb
9.1	50.5	17.7	K
9.5	8 25.6	22.2	
9.5	29.4	29.4	
9.5	39.4	58.6	
9.2	46.7	38.4	
9.5	9 2.6	30.9	
9.5	8.8	8.7	
9.2	10.4	16.8	K
9.5	41.3	12.2	
8.9	45.5	58.0	K
9.3	48.0	27.6	
9.5	10 0.8	26.6	
9.5	7.3	28.0	
9.5	9.6	51.5	
9.1	9.9	48.1	K
9.5	14.0	10.3	
6.5	29.1	46.9	Kb
9.5	11 11.8	57.6	
9.4	18.4	59.3	B
9.4	20.2	55.0	
8.6	51.1	58.3	K
9.5	58.0	12.7	
9.5	12 21.0	6.5	
8.9	13 3.2	33.3	
9.3	15.5	19.4	
9.4	21.3	4.1	
9.4	22.9	27.3	
9.3	25.0	45.5	
9.3	44.0	40.6	
9.2	58.0	40.6	K
9.5	14 42.0	55.8	
9.4	45.8	35.1	B
8.8	15 13.3	21.9	
9.4	14.5	12.5	B
9.5	15.6	29.7	B
9.4	35.1	14.3	
9.3	39.3	52.4	
9.5	53.1	24.1	
9.4	55.9	19.0	B
9.5	58.8	40.6	
9.5	16 24.0	8.5	
9.5	17 0.0	55.1	
8.4	33.1	33.2	L
9.0	40.3	33.3	
9.5	44.8	47.4	
9.2	46.0	44.3	
9.5	49.2	40.6	
9.5	18 7.3	58.4	
9.0	25.4	26.2	
8.6	39.9	28.5	L
8.8	58.6	15.7	
8.2	19 1.0	31.9	B
9.5	1.0	30.7	
9.4	33.7	28.5	
9.0	39.5	10.8	
9.5	57.7	41.4	
9.5	20 4.2	45.3	
	+	+	
10 pr.	30.39	1.18	

9° — 20°

+1°

4001—4060

m	19h ′ ″	+1° ′	
9.1	20 14.4	23.7	
9.5	15.0	3.7	
9.5	16.5	45.5	
7.8	32.1	53.1	K
9.3	38.5	33.0	
9.5	21 14.7	14.3	
9.5	16.3	39.6	
9.5	29.2	52.6	
9.5	30.0	35.3	
8.3	41.1	39.8	K
9.3	49.6	38.3	B
9.5	57.9	48.5	
9.2	22 1.8	58.1	
9.2	7.2	37.1	K
8.9	18.7	33.5	K
9.0	24.2	29.8	K
8.8	51.7	57.3	
9.5	53.1	23.0	
8.9	57.4	32.8	
9.4	23 14.8	12.3	
7.1	45.3	43.2	K
9.3	24 8.9	42.7	B
9.5	19.9	42.0	
8.8	25 9.0	35.4	L
9.5	12.8	15.7	
8.8	21.2	48.8	
8.9	46.4	58.4	K
8.6	26 10.6	41.0	
9.2	14.6	28.4	
9.4	48.5	29.3	
9.5	49.3	56.5	
9.5	27 7.1	54.9	
9.4	7.3	1.1	
9.4	7.8	3.6	
8.5	9.2	10.2	K
9.5	16.9	48.6	
9.5	26.5	36.4	
9.5	47.6	39.2	
9.5	57.7	32.7	
9.2	59.0	53.6	
9.4	28 12.1	3.7	
9.3	22.3	25.5	
9.5	35.2	39.6	
9.4	29 23.2	59.9	
9.5	27.1	41.4	
9.2	28.7	36.4	
9.5	42.0	28.7	
9.4	57.8	7.3	αB
9.5	30 30.0	47.0	
7.6	31.8	10.7	K
9.0	50.0	26.3	
9.5	55.3	37.5	
9.1	58.8	10.9	K
9.5	31 13.6	20.1	
9.5	34.5	5.0	
9.5	43.4	45.5	
9.4	53.9	1.1	
9.2	55.3	59.7	α
9.0	57.6	33.5	
9.5	58.5	55.6	
10pr.	+ 30.39	+ 1.23	

4061—4120

m	19h ′ ″	+1° ′	
9.5	32 11.7	37.9	
9.1	41.5	3.5	
9.3	42.6	28.9	
9.1	46.2	0.6	
9.5	33 22.9	21.6	
8.5	29.8	25.5	K
8.0	30.0	20.4	K
9.1	54.1	1.4	B
8.9	34 3.4	58.1	
8.8	14.5	23.1	K
9.4	15.4	52.4	
9.5	48.5	12.8	
9.4	35 3.6	21.7	
9.5	6.2	30.1	
7.8	7.3	14.7	K
9.3	17.1	56.4	
8.5	28.2	11.7	K
8.8	45.0	15.6	K
9.3	54.3	17.3	
9.5	58.9	20.9	
9.2	36 1.0	15.5	α
9.5	59.1	55.5	B
9.2	37 8.3	2.1	
9.5	10.8	51.5	
9.2	35.6	42.3	b
9.5	42.4	26.3	
9.3	38 25.3	7.0	
9.5	28.0	34.5	
9.2	28.6	36.0	
9.2	41.2	5.7	
9.5	41.4	1.0	
9.5	52.9	20.3	
9.5	55.3	58.2	
9.0	39 9.2	49.8	
7.6	9.3	7.9	K
9.2	19.6	30.0	
9.5	29.4	44.6	
9.1	32.0	22.9	
9.5	40 29.5	23.0	
9.0	38.0	14.3	K
9.5	42.1	3.0	
9.5	55.3	44.5	
9.5	41 18.6	49.6	
9.5	31.6	35.3	
9.2	33.2	15.9	
9.5	33.9	44.0	
9.5	47.2	27.4	
9.0	42 15.8	59.9	
9.2	35.9	51.3	
9.3	40.8	47.4	
9.5	43.0	52.7	
9.5	43 14.6	14.1	
8.5	23.3	24.1	
9.5	46.1	16.4	
9.0	47.5	41.2	
9.5	44 4.6	47.1	
9.5	7.4	55.6	B
8.4	19.5	24.6	
9.5	26.2	48.9	
9.0	29.3	42.3	K
10pr.	+ 30.40	+ 1.40	

4121—4180

m	19h ′ ″	+1° ′	
9.2	44 32.1	2.5	
8.0	39.5	14.2	K
9.5	45 2.2	34.6	
8.9	13.5	21.4	K
9.5	14.6	40.6	
9.5	21.6	45.2	
9.5	40.1	16.9	
9.5	40.4	33.0	
8.7	46 18.5	4.7	
9.0	22.0	43.0	Bb
9.3	30.0	0.2	
9.5	31.0	30.7	
9.3	33.5	38.7	
8.5	54.3	34.5	K
8.7	47 5.0	34.5	K
9.3	19.4	37.6	
9.4	44.5	32.4	
9.3	45.4	5.9	a
9.5	48 2.3	22.0	
8.4	33.2	39.9	K
9.5	45.9	18.7	
9.2	56.1	10.2	
8.8	49 9.5	34.9	K
9.5	17.4	16.0	
8.5	29.8	32.7	K
9.2	30.0	0.5	
9.5	32.2	24.6	
9.2	33.5	58.9	
9.5	52.2	17.6	
9.5	58.6	24.0	
9.5	59.2	5.4	
9.5	50 14.4	14.5	
9.5	24.6	7.2	
9.5	46.7	4.5	
9.5	50.3	26.5	
9.3	57.5	13.4	
9.5	51 14.2	37.8	
9.3	20.9	1.7	
7.1	23.3	16.7	K
8.5	37.6	8.4	K
8.7	42.9	12.5	
9.5	52 5.0	53.3	
9.0	6.8	5.8	
9.5	12.0	39.8	
9.5	27.0	25.4	
9.5	46.9	44.4	
9.5	50.1	36.2	
7.6	53 1.0	18.7	K
9.3	9.3	59.2	
9.5	10.4	15.2	
8.5	22.4	5.3	K
9.5	24.9	12.4	
9.5	31.1	35.7	
9.1	35.0	45.6	
8.3	53.0	3.0	K
9.4	59.6	13.5	B
9.5	54 0.2	36.5	
9.0	3.6	9.5	K
9.2	5.7	1.5	
9.0	5.7	28.8	
10pr.	+ 30.41	+ 1.54	

4181—4240

m	19h—20h ′ ″	+1° ′	
9.5	54 48.5	1.9	
9.5	58.2	56.4	
9.5	59.0	6.7	
9.3	55 5.4	21.9	
8.5	15.7	34.4	Kb
9.5	28.6	7.1	
9.5	38.2	18.1	
9.5	50.2	5.0	B
9.3	58.9	2.1	
9.5	56 0.8	42.9	
9.0	12.3	7.9	
9.5	58.7	56.4	
9.3	57 12.3	39.8	
9.2	20.1	23.3	b
9.2	35.7	26.4	
7.2	49.7	42.7	K
8.8	58 37.6	21.9	K
9.0	47.8	34.0	K
9.0	48.5	45.7	
9.5	59 3.0	59.8	
9.2	14.9	41.6	
9.0	17.6	19.7	
9.0	28.8	32.6	
8.7	38.3	29.7	K
9.5	0 9.3	43.2	
9.5	24.9	15.2	
9.5	25.5	35.8	
9.5	1 1.0	23.7	
9.0	8.2	53.1	B
9.0	17.5	47.2	K
9.3	38.0	5.6	
8.2	39.0	13.2	Kb
9.4	56.5	20.0	
9.3	2 15.0	6.0	
9.3	22.7	6.6	
9.1	39.2	46.7	
9.5	40.0	52.8	
9.5	47.0	40.0	
9.5	49.2	38.1	B
9.3	3 46.7	51.2	
9.3	49.0	18.6	
8.9	4 7.5	1.8	K
9.5	22.1	11.9	
9.2	40.2	14.8	
9.2	42.3	42.5	
9.0	51.6	11.1	B
8.1	51.9	52.8	K
9.0	59.8	35.5	
9.5	5 20.9	20.0	
9.5	24.5	45.1	
9.4	40.5	12.5	
9.3	42.1	57.1	B
8.8	6 2.3	1.7	
9.5	12.9	2.8	
9.3	7 2.9	9.9	
8.0	46.5	52.7	K
9.4	8 8.8	7.2	B
9.5	8.9	31.9	
9.3	14.2	39.3	
9.3	17.4	30.4	B
10pr.	+ 30.42	+ 1.68	

4241—4300

m	20h ′ ″	+1° ′	
9.4	8 32.3	11.9	B
9.4	40.4	17.5	
8.8	44.5	20.0	K
8.3	9 13.9	37.1	K
9.5	28.8	54.7	
9.1	31.5	10.3	B
9.5	50.3	17.6	
8.5	10 1.6	1.2	Kb
9.5	36.5	13.7	B
9.5	51.3	34.9	
9.3	11 5.6	50.4	
9.5	17.8	22.0	
9.5	20.6	14.9	
9.0	38.3	11.2	
7.5	40.4	47.3	K
9.1	52.7	9.5	a
9.2	56.8	1.3	
9.3	58.2	58.7	
9.4	12 7.3	5.7	B
9.2	10.2	15.6	
8.3	18.0	32.4	K
9.5	19.0	10.8	B
9.5	23.4	5.2	
9.5	48.0	25.0	B
9.4	54.2	33.1	
9.5	13 59.2	56.7	
9.4	14 13.5	51.5	
7.5	15.7	12.8	K
9.3	15.9	47.6	B
9.5	16.7	30.4	
9.5	22.0	29.6	
9.3	32.2	48.8	a
9.0	37.8	44.1	
9.5	15 15.2	59.9	
9.2	36.5	51.3	b
9.5	55.3	49.0	
9.5	16 2.8	38.0	
9.5	45.3	0.8	
9.2	17 11.5	4.7	
9.3	49.1	11.2	B
9.5	54.8	45.4	
8.3	59.5	16.9	K
9.5	18 12.3	52.5	
9.1	46.9	33.5	
9.5	51.6	15.2	
9.5	56.0	40.7	
9.5	19 7.4	16.2	
9.2	14.1	2.7	
8.4	20.2	26.4	Lb
9.5	24.3	50.2	
9.5	31.6	45.0	
9.0	20 10.4	51.2	K
9.5	45.4	10.3	
9.5	51.2	27.5	
9.2	51.8	46.9	αB
8.7	52.1	37.1	K
9.5	55.8	26.0	
8.7	21 3.2	54.5	K
8.9	16.7	3.3	
9.5	58.8	2.6	
10pr.	+ 30.43	+ 1.84	

4301—4360					4361—4420					4421—4480					4481—4540					4541—4600				
	20m		+1°			20m		+1°			20m—21m		+1°			21m		+1°			21m—22m		+1°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	21	59.0	42.4		9.2	39	53.4	35.0		9.3	57	50.6	57.3	a	9.0	19	47.1	57.5		9.5	40	57.0	4.8	B
9.5	22	27.7	53.6		9.0	40	5.7	58.8		9.3	58	43.9	43.0		9.5		49.9	2.4		9.5		58.0	9.7	B
9.5		47.4	18.7		7.8		14.6	18.7	Kb	9.1		58.0	36.6	aBb	9.5	20	12.0	40.9		9.5	41	31.0	4.5	
9.2		54.9	23.2	K	9.0		17.9	41.2		9.5	59	10.0	36.2	a	9.5		37.8	37.8		9.5	42	18.5	9.0	a
8.5	23	19.2	54.2	K	9.3		32.4	32.2		9.3	0	9.4	27.3		9.5	22	11.6	40.9		9.5		24.7	7.8	a
9.0		40.9	23.4	K	9.5		47.7	50.7	B	9.5		18.8	5.7		9.3		13.3	15.9		9.3		36.7	22.0	
8.8	24	16.4	15.5	K	9.5		49.0	49.2		9.3		28.7	54.4		9.5		42.0	22.8		9.0		40.3	5.3	K
9.5		37.9	40.3		9.5		53.7	1.7		9.0		37.9	37.9	K	9.5		48.6	36.4		9.5	43	2.7	7.2	
8.2		58.4	44.4	K	7.5	41	7.9	11.7	K	9.5		38.6	56.2		8.2		54.3	49.7	B	9.5		5.7	44.2	
7.5	25	1.6	37.8	K	8.3		15.9	30.2		9.5	1	6.8	19.4		8.3	23	27.1	51.1	L	9.5		9.2	47.0	
9.0		8.4	57.0	L	8.8		22.4	31.2		7.7		30.8	12.5	K	9.0		38.0	44.7	L	9.0		35.3	42.5	K
9.0		19.6	52.7	L	9.5		59.2	10.7		9.2		38.9	33.7	K	9.3	24	7.0	2.8		8.8	44	45.2	14.3	K
9.5		36.6	33.2		9.5	42	0.4	24.2		9.5	a	0.7	43.1		9.5		8.3	59.4		9.5	45	14.8	55.1	
8.0		38.1	56.5	L	7.7		39.5	53.5	K	9.5		9.3	56.2		9.0	25	27.0	20.1	K	9.5	46	8.3	7.4	
9.5		47.9	43.0		9.5		45.5	28.4		9.0		37.9	12.8	K	9.5	26	15.5	9.0		9.2		18.9	57.0	Kb
8.8	26	17.9	34.0	Kb	9.0		58.0	24.1		9.5		50.9	39.2		8.3		41.3	38.8	K	9.5		31.4	22.7	
8.3		29.9	12.4	K	9.4	43	8.0	22.7		9.3	3	0.3	3.8	K	8.8		44.0	24.1		9.5		47.6	29.0	B
9.3		41.6	50.8	B	9.3		8.7	54.7	K	9.2		23.9	9.3	K	9.2		53.3	59.8	aB	9.5		59.6	5.8	B
9.5		59.2	39.6		9.5		38.6	43.2		9.5	4	14.4	21.4		9.3		54.5	51.0		9.3	47	21.7	13.3	K
9.5	27	3.9	41.2		9.2		41.2	43.9	B	9.5		17.8	0.5		9.2	27	9.8	16.7	K	7.5	48	17.2	40.1	Kb
9.0		30.6	25.3		9.0	44	2.0	47.0		8.3		42.4	2.7	K	9.2		9.8	31.9		9.5		56.2	37.6	
9.0	28	0.7	47.9		9.3		43.4	57.9	K	8.8		57.4	13.1	K	8.7		15.3	37.4	K	9.5	49	38.2	43.9	
8.3		9.4	20.8		8.5		48.6	33.0		8.8	5	7.9	46.8		7.7		20.6	11.8	K	9.3	50	6.5	35.2	B
9.5		28.4	39.5		9.5	45	0.1	48.9	Kb	9.3		11.9	13.8		9.1		29.7	53.9	B	9.5		32.1	35.0	B
9.3	29	3.9	31.5		9.0		23.3	52.2	K	*9.0		23.6	39.2	K	8.5		34.7	35.0	K	9.4	51	31.2	40.0	B
9.3		20.7	1.7		8.0		37.9	25.3	K	9.5	6	12.1	35.0		9.3	28	6.1	53.8		9.5		46.5	7.0	
7.7		23.0	59.3	K	9.2		47.9	42.0		9.5		16.6	5.6		9.0		17.5	27.3	Kb	9.5		47.2	40.8	
9.0		33.0	7.5	Kb	8.8		54.4	54.7	K	9.5		50.9	50.7		9.3		36.0	33.6		9.4	52	6.2	31.5	B
9.5	30	18.8	57.6		9.5	46	20.9	21.1		8.8	7	18.1	8.7	K	9.5	29	15.5	40.2		9.5		9.2	11.3	B
9.5		27.9	46.2		9.5		29.8	52.9		8.5		32.1	3.8	K	9.5		31.6	16.5		9.5		59.7	53.6	
9.5		40.3	10.5		9.3		34.9	2.6	B	9.5		48.4	50.3		9.3		36.7	38.9	B	9.0	53	20.5	9.0	
9.5	31	7.4	59.9		9.5	47	10.9	47.5		9.5		52.2	39.6		9.4		58.3	43.4	B	9.5	54	21.3	51.3	
9.5		17.1	58.7		7.0		47.9	16.2	K	9.5	8	30.4	2.7		9.5	30	19.3	1.9		9.3	55	45.9	30.2	B
9.5		30.9	32.3		9.1		52.9	57.3		9.5	9	6.2	52.7		9.3	31	39.6	15.9	b	9.4		46.6	27.2	
9.2		46.6	50.7	Kb	9.5	48	38.4	46.5		9.0		22.1	29.1		9.4	32	0.5	38.3	B	9.5		49.1	15.3	B
8.3		58.4	38.8	K	9.0	49	9.4	14.8	K	9.5	10	39.4	37.5		9.5		2.5	14.5		9.5	56	12.3	6.3	
9.0	32	27.9	29.5		7.7		25.9	11.0	K	9.5		48.4	51.6		5.0		12.5	36.8	K	9.5		54.9	54.7	
9.5		40.7	46.6		8.5		52.4	55.4	K	9.3	11	8.3	3.3	B	8.0		23.0	29.8	K	8.7	57	23.5	5.1	K
9.5		49.0	54.9		8.5		56.4	45.6	K	9.5		14.1	23.5		9.5		41.3	8.0		8.8	58	16.3	5.1	K
9.2		56.4	51.0		9.5	50	2.0	53.3	B	9.2		18.9	18.7	K	9.5	33	17.9	24.0	B	8.8		31.4	33.6	
9.3	33	7.9	5.1		9.5	51	12.2	21.1		8.8		48.9	29.4	K	9.2		19.2	6.6	b	9.5		31.4	20.7	B
*9.3		31.7	5.8		8.6		51.7	3.0	B	9.3	12	6.4	24.2	K	9.0		25.0	38.7		9.5	59	2.2	18.9	
9.5		31.9	31.5	K	9.2		52.7	43.5	b	9.0		36.4	46.8		9.3		49.0	42.7		8.5		7.2	9.8	K
9.5		40.2	52.8		9.5	52	53.4	41.2		9.5	13	43.1	4.7		9.5		53.4	16.2	B	7.0		16.7	44.1	B
9.0		41.4	28.7	K	8.6	53	7.2	2.5	L	*8.0	14	26.8	24.8	B	9.3		58.0	33.3		9.5		34.3	54.4	B
9.5	34	0.0	47.5		*9.0		28.9	3.2	L	8.5		28.6	54.6		9.5	34	24.8	5.5		9.0		38.2	12.3	K
9.2		51.4	55.1		8.5		53.7	37.1	K	9.5		56.9	28.4		9.5		29.1	51.3		8.7	2	36.2	26.1	K
9.5	35	2.9	37.8		9.4	54	8.0	33.9		9.0	15	38.4	45.1		9.0		51.5	44.1	K	9.5	3	16.7	33.1	
9.0		24.8	46.8	b	9.5		18.8	54.4		8.5		38.1	36.1		8.8	36	1.7	8.2	K	9.3		37.9	9.5	K
9.3		25.5	45.2	B	9.5		28.2	19.7		9.5	16	12.9	45.8		9.5		22.3	51.5		9.5	4	41.2	43.2	
9.4		31.7	19.9		9.5		33.6	1.3		8.2		24.9	4.3	Kb	9.3		27.5	19.8		9.5	5	14.2	32.2	
9.5		36.7	47.5	B	9.5		33.7	43.2		9.3		28.1	1.3	K	9.5	37	7.2	57.4		9.3	6	37.7	44.6	
9.5	36	31.4	11.0		8.3	55	42.9	8.2	K	9.5		36.3	56.9		9.5		26.1	57.1		9.0	7	1.7	15.7	K
8.8		55.4	18.7	K	9.4		56.2	40.3	B	9.5		48.4	32.6		9.5		31.1	38.8		9.5		2.6	58.2	
9.3		58.2	4.9		9.5		58.6	30.4	B	9.5		49.6	0.2		9.5		56.1	20.3	aB	9.5		11.5	59.3	
9.5	37	13.8	49.7		9.0	56	16.0	59.2		9.0	17	29.1	19.7	K	9.5	38	2.8	19.5	B	8.5	8	12.2	13.0	K
9.3	38	2.5	59.3		8.8		42.9	24.2		8.0	18	9.9	25.3	Kb	9.2		9.1	37.8	K	9.4		20.6	52.6	
9.5	39	27.9	57.0		7.0	57	24.7	43.3	L	9.5		47.5	53.4		9.3		23.9	56.1		9.3	9	1.2	37.6	b
var		29.5	54.5	B	9.2		24.9	56.2		9.5		57.3	10.6		9.5	40	44.8	17.9		9.3		28.7	13.6	
9.5		34.7	55.3		7.8		43.6	58.9	Kb	9.5	19	29.3	38.2		9.0		50.5	35.9		9.4	11	21.5	34.1	B
10pr.		+ 30.44	+ 2.05		10pr.		+ 30.46	+ 2.22		10pr.		+ 30.48	+ 2.44		10pr.		+ 30.51	+ 2.65		10pr.		+ 30.54	+ 2.84	

4341a				
9.7	33	22.4	3.2	B

4406a				
9.6	53	48.2	32.2	B

4445a				
9.5	5	38.3	33.0	B

4465a				
8.8	14	26.3	25.2	B

4601—4647

m	22ᵐ ,	"	+1° ,	
9.5	12	11.2	16.8	
9.3		39.1	0.1	
9.5	13	10.2	17.8	
9.5		11.4	54.2	
9.5	16	20.0	30.0	
9.0	17	26.1	54.4	K
9.0		48.5	8.8	K
9.0		56.2	37.6	K
9.5	18	20.2	7.8	
9.0		31.7	45.3	K
9.3		39.7	16.1	Lb
8.5	19	2.0	13.7	K
9.3		11.1	53.4	
9.2		46.5	20.0	L
9.5	22	11.3	29.7	
9.4		17.0	50.7	B
9.4		31.6	49.2	
9.3		41.2	44.6	
9.0		48.3	56.3	
8.0		56.9	18.3	K
9.0	23	13.6	6.6	Lb
9.0		18.7	7.2	L
7.7	25	1.2	50.6	L
9.3	26	1.7	21.4	
9.3		15.9	53.3	
8.0		22.5	7.3	K
9.1	27	5.9	44.8	
9.5		18.6	36.9	
9.0		45.1	21.4	
8.6		48.8	54.3	K
8.2	28	9.9	48.8	K
9.5		12.8	50.1	
9.1	29	36.7	2.1	b
8.3		53.8	10.3	K
8.0	31	5.5	32.5	L
9.5		18.0	47.3	
9.4		32.9	46.2	B
9.3	32	33.5	32.9	
9.5	33	14.3	2.3	
9.2	35	48.6	19.0	Lb
9.2	36	6.5	20.0	L
9.3	37	26.6	22.9	
9.0		31.3	50.5	
9.3		40.0	50.4	a
9.3	38	8.6	28.0	B
9.5		47.9	29.8	
9.5	39	16.8	40.2	
		+	+	
10pr.		30.58	3.06	

4648—4694

m	22ᵐ—23ᵐ ,	"	+1° ,	
8.8	39	20.8	11.0	K
9.0		58.6	1.8	
9.2	40	36.6	7.3	B
8.5	41	30.6	8.2	K
8.7		59.8	49.5	K
9.3	42	6.7	28.7	
9.5		52.5	27.3	
9.3	43	12.3	59.7	
8.8		19.8	6.5	
8.5	44	18.6	0.9	Kb
9.3	45	42.5	44.1	
9.5	46	2.2	58.1	
9.5		17.8	14.2	
9.5		20.3	25.2	
8.0		27.5	3.2	K
9.5	47	40.0	38.7	
8.7	48	32.0	10.3	K
9.5	50	1.3	14.4	
9.5		7.3	44.3	
9.5		31.0	26.8	B
9.3		37.7	14.1	b
9.5		41.0	32.0	
9.5	52	40.0	19.0	
8.8		50.7	37.6	K
9.1	53	27.6	2.0	aBb
8.8	54	12.5	4.8	B
9.0	55	30.7	27.3	
8.5	56	22.3	49.8	K
9.5		25.3	8.6	
9.5	57	23.7	45.8	
9.5	58	5.0	33.4	
9.5		29.3	24.1	R
9.1		41.0	1.2	
9.3	59	23.2	55.9	
9.5		35.0	29.6	
9.5	0	16.1	24.1	
9.0		52.0	12.0	K
9.5	1	16.0	28.1	
6.0		16.9	19.0	K
8.0		59.4	22.0	K
8.3	2	10.1	9.1	K
9.5		59.0	40.1	
8.7	3	7.7	32.3	L
9.4		43.5	51.6	
9.2	4	14.1	8.5	Kb
8.7		52.9	14.4	K
8.2	5	12.0	54.1	K
		+	+	
10pr.		30.62	3.18	

4695—4741

m	23ᵐ ,	"	+1° ,	
8.2	6	1.3	52.8	Kb
8.0		16.3	24.2	L
9.5		17.5	38.6	
9.3	7	1.1	3.6	
8.8		39.7	21.7	
9.5	8	29.6	4.1	
9.5		50.2	15.5	
9.5	9	18.2	55.2	
9.5		54.8	17.7	
9.5	10	4.5	37.0	
9.5		51.0	3.2	
9.5	11	36.2	8.8	
9.2		40.0	30.0	aB
9.5	12	13.3	19.2	
9.0		16.5	30.5	
8.8		39.1	17.3	K
9.3	13	6.7	7.3	a
7.8		26.3	40.5	K
9.3		42.8	5.1	
8.0		47.2	23.5	K
9.5		49.7	6.5	
9.5	14	36.5	56.3	
9.5		43.4	41.4	
9.5	15	30.7	10.6	
9.5	16	0.8	12.0	R
9.5		4.6	38.7	
9.5		35.0	30.4	
9.5	17	0.0	43.3	
8.8		12.6	49.1	
8.0	19	19.0	40.8	K
8.0	20	17.9	4.7	K
9.5	21	37.0	27.4	B
9.5	22	24.9	47.7	
9.0		54.2	12.1	
9.5	23	0.3	29.4	
9.5		19.6	13.2	
8.0		41.9	33.5	K
9.5	24	2.2	53.9	B
9.5		12.2	0.7	
9.0		52.5	32.4	
9.5	26	7.9	50.1	
9.0		47.3	29.7	Kb
8.5		58.6	12.5	K
9.5	27	27.0	40.1	
9.5		51.9	35.6	
8.5		57.9	23.6	L
9.0	28	21.0	16.0	K
		+	+	
10pr.		30.65	3.28	

4742—4787

m	23ᵐ ,	"	+1° ,	
8.5	28	30.9	37.7	L
9.0		32.9	52.6	
6.8		59.3	17.7	K
9.5	29	26.6	51.0	
9.5		42.2	29.3	
9.5	30	4.2	20.2	B
9.5		6.2	56.3	
9.5		37.8	3.5	
9.4		57.6	12.1	
8.5	31	1.6	26.5	
9.0		2.1	6.6	K
9.4		7.5	3.4	B
9.5	32	45.0	7.2	
9.5		54.3	38.0	
9.5		56.9	48.5	
9.5	33	18.6	13.1	
8.2		52.9	39.4	K
9.5	34	51.0	48.3	
9.0	35	14.2	34.9	
9.5	36	8.9	15.0	
9.0		27.2	53.4	
9.5		32.6	25.3	
8.5		43.3	20.4	K
9.5	37	16.6	41.8	
8.5		39.6	17.0	K
9.3		41.2	29.4	
9.3	38	48.9	17.3	B
9.5	39	9.0	52.2	
8.7		59.3	56.3	K
9.5	40	18.9	13.1	
9.5	41	0.0	42.5	
7.7		24.6	23.9	Kb
8.7		37.2	37.3	K
9.5		45.0	14.2	
9.3	42	19.2	14.2	
9.5		22.6	46.3	
9.3		27.6	12.8	
9.3		33.0	5.5	B
8.8		41.9	10.1	K
9.4		48.0	1.1	B
9.5		53.6	28.0	
8.7		56.6	6.5	K
9.3	43	14.3	49.3	
9.5		17.9	10.0	
7.5		42.2	25.9	K
9.5	44	0.3	36.3	
		+	+	
10pr.		30.69	3.32	

4788—4833

m	23ᵐ ,	"	+1° ,	
9.4	44	30.0	51.8	B
9.5		33.9	43.5	
9.0	45	0.8	34.3	K
9.0		30.8	39.5	K
7.2		39.3	16.1	L
8.5		39.8	30.6	K
9.4	46	8.0	37.6	
8.8		15.3	54.5	K
9.3		44.7	34.6	B
9.5		45.5	30.6	B
9.5		47.8	27.0	B
8.2	47	0.8	40.2	L
9.5		24.0	27.5	B
9.2		25.3	1.1	b
9.5	48	12.3	39.2	
9.5		22.8	55.7	
9.0	49	4.7	6.7	K
9.5		5.8	40.6	
9.5		49.0	51.4	B
9.5	50	39.0	8.8	
9.0		55.8	28.5	K
9.3	51	1.8	19.5	
9.3		48.8	20.2	
9.5	52	9.3	25.3	
9.5		25.0	40.9	
9.0		25.2	2.7	K
8.2		59.0	50.9	K
9.5	53	7.3	6.4	
9.5		19.8	13.0	K
9.2		20.8	34.3	K
9.5		39.8	35.7	aR
9.5		46.8	42.3	
7.7	55	19.8	19.2	Kb
9.3		36.8	33.0	
9.5	56	6.3	46.4	
9.5		33.0	34.0	
8.8	57	5.3	26.0	
8.8		44.8	34.0	K
9.5	58	13.8	36.7	
9.5		26.3	55.0	
9.5		54.3	57.7	
9.5		55.0	29.8	
9.2	59	1.0	6.1	
9.5		14.3	15.0	
8.7		26.3	2.9	Kb
9.5		49.3	39.8	
		+	+	
10pr.		30.71	3.34	

24ᵐ

9.5	14	14.9	7.2

30ᵐ

9.5	15	41.9	23.9

Zone + 2°

1—40				41—80				81—120				121—160				161—200			
	0ᵘ		+2°		0ᵘ		+2°		0ᵘ		+2°		0ᵘ—1ᵘ		+2°		1ᵘ		+2°	
m	′	″	′		′	″	′		′	″	′		′	″	′		′	″	′	
9.5	0	30.4	28.9		9.5	15 46.5	18.4		9.0	30 24.3	12.7	B	9.5	44 40.4	27.3		9.0	1 44.7	0.6	
9.5		48.6	27.8	B	9.5	50.0	54.2		9.5	44.0	33.5		9.5	51.0	59.4		9.0	2 8.2	49.9	B
8.5		56.3	38.6	K	9.5	16 11.0	25.3		9.3	45.8	16.8		9.4	45 7.2	33.2		9.0	32.9	18.4	K
9.5		59.5	1.9		8.2	31.0	57.5	L	7.5	31 39.5	19.0	K	9.5	31.4	18.4		9.0	43.3	13.5	Kb
9.3	1	2.0	12.0	b	9.4	33.5	10.7		9.0	32 0.6	30.6	B	9.3	49.5	54.7		9.5	46.2	32.7	
9.5		12.4	31.7	B	8.5	17 8.1	34.4	K	7.8	21.2	50.8	K	8.5	46 0.8	30.9	Kb	8.8	3 10.2	56.2	
9.4		32.5	8.6		9.5	28.0	25.9		9.5	33 46.9	56.7		9.3	8.7	1.9		9.5	41.1	59.0	
9.5		45.2	55.2		9.5	39.6	4.6	B	8.3	55.2	48.5	K	9.2	20.0	55.2		9.5	51.3	44.8	
9.5	2	29.6	32.3		9.5	51.0	2.6		8.7	34 19.5	50.8	K	9.5	43.7	13.5		9.3	57.2	35.8	
9.5	3	16.6	22.0		9.5	19 8.5	32.6		9.5	22.7	14.3		9.5	47 50.8	15.0		9.3	4 2.1	43.1	
9.5		36.8	51.1	B	9.5	21.5	33.1		8.7	33.5	58.7	K	9.4	48 19.4	31.2		9.2	5 32.6	8.9	a
9.5	4	2.7	24.1		9.5	26.5	47.6		9.0	35.4	40.2	B	9.1	33.1	53.6	b	9.5	6 0.5	27.6	
9.5		40.5	4.2		9.5	48.0	44.8	B	9.0	37.9	8.4	B	9.5	49.2	34.2		9.0	22.3	7.4	
9.4	5	3.9	58.3		7.7	55.4	0.4	K	8.9	38.1	2.5		9.5	49 24.0	17.3		9.5	38.2	13.6	B
9.5		14.0	17.0		9.5	21 4.5	6.4		8.9	35 23.0	32.4	B	9.4	54.0	32.2		8.7	7 18.6	3.4	Kb
8.5		35.3	8.2	K	9.5	5.7	11.1	B	9.0	37 24.9	54.5		9.4	50 39.7	59.7	B	9.3	35.1	23.2	
8.8		40.1	35.4	K	9.5	22 30.0	20.9		7.7	27.7	24.3	B	9.4	42.9	38.2	B	9.2	8 6.2	59.9	
8.9	7	3.0	39.9	B	8.5	23 5.1	27.4	K	9.4	33.5	48.6		9.5	56.0	44.2		9.5	13.4	5.8	B
8.7		14.1	33.7	K	9.5	35.5	11.8		9.0	38 4.6	56.7		9.4	51 4.0	16.6	B	9.0	19.7	52.1	
9.0		21.5	28.6	K	9.5	49.7	39.2	B	9.2	39.5	58.2		9.0	56.6	18.7	Kb	9.5	36.3	13.6	B
9.5		37.9	15.8		9.5	55.0	27.0		9.4	50.6	26.4		8.7	52 26.0	31.5	K	9.0	48.3	14.6	
9.5		57.0	41.7		*8.3	24 16.3	55.7	K	9.5	55.8	59.5		9.0	53 9.0	9.0		9.5	49.4	12.8	B
9.4	8	1.5	20.1		9.0	42.5	39.6		9.5	39 35.8	2.4		8.7	42.0	39.1	Lb	9.4	9 43.3	51.7	B
9.4		4.3	25.7	B	8.9	25 58.6	10.8	B	8.7	40 11.9	12.4	K	9.4	59.5	10.6		9.1	10 14.7	22.5	b
9.5		30.8	45.5		9.4	26 22.4	29.9	B	8.5	19.4	6.5	Kb	9.3	54 30.0	29.1		5.5	19.4	51.2	L
9.0	9	30.0	53.5	K	9.4	22.9	33.9		9.5	38.0	13.1		9.4	37.3	15.3		9.3	23.0	32.4	
9.5		55.6	4.4		7.8	27.9	31.3	Kb	9.5	41 2.7	18.3		9.0	55 7.3	33.0		9.5	28.7	9.8	B
9.2	10	21.9	56.7		9.3	27 14.2	41.7		8.8	58.1	56.0		9.5	27.0	29.6		9.5	33.4	14.1	
9.5		23.0	6.3		9.2	27.0	36.7	B	8.7	58.9	4.9	K	8.0	58.5	27.4	K	9.4	53.0	21.9	
9.5		31.0	17.0	B	9.1	30.8	10.0	aB	9.5	42 8.2	30.1		9.5	56 6.5	26.0		8.0	11 53.9	30.7	K
9.5		34.0	22.3		9.5	45.0	18.0		9.2	26.7	52.3		9.5	57 5.0	51.8		*9.5	12 6.1	47.6	
7.5		42.8	59.1	Kb	8.7	46.7	24.6		9.5	47.0	47.1		9.0	42.3	56.7		9.0	44.1	17.6	
9.4		55.5	20.7	B	8.9	28 10.9	31.4	B	9.5	56.5	55.8		9.5	58 15.1	13.3		9.5	13 13.5	26.6	
9.5	11	46.0	20.4		9.2	18.6	38.6	aB	8.5	56.8	35.3	K	9.4	30.7	16.5		8.8	19.6	8.4	
8.8		53.2	53.4	L	9.0	24.8	4.8		9.5	57.1	14.7		8.0	36.3	29.3	K	9.5	47.5	31.4	
9.0		53.5	15.2	Kb	9.5	29.0	45.2	B	9.5	43 7.1	45.4		9.5	59 39.5	49.7		8.5	14 48.8	46.0	Kb
8.0	12	44.3	14.5	K	9.5	29 21.5	21.3		9.0	34.5	41.1	B	9.0	49.5	30.4	K	9.5	15 35.3	40.7	
8.5	13	17.9	39.2	K	9.5	44.8	54.1		6.2	50.6	35.4	K	9.4	50.3	33.3	B	9.4	59.2	14.5	
9.5	14	32.0	7.3		8.8	45.2	4.6	B	9.5	44 7.7	52.7		9.5	0 26.2	12.8		9.0	16 10.0	32.7	
9.5	15	43.4	57.7	B	6.8	30 3.8	20.2	K	9.3	8.3	25.8	B	9.5	1 1.3	35.4		9.5	10.5	12.2	B
		+	+				+	+			+	+			+	+			+	+
10 pr.		30.74	3.34		10 pr.		30.78	3.32	10 pr.		30.82	3.29	10 pr.		30.85	3.25	10 pr.		30.89	3.19

62ᵃ				
9.3	24	20.3	35.1	B

191ᵃ				
9.5	12	16.0	55.0	

201—260				261—320				321—380				381—440				441—500			
	1ª		+2°		1ª		+2°		1ª—2ª		+2°		2ª		+2°		2ª—3ª		+2°	
m	° ′	″	′	m	° ′	″	′	m	° ′	″	′	m	° ′	″	′	m	° ′	″	′	
9.5	16	29.3	54.8	9.3	37	20.8	16.3	8.0	55	29.2	39.1	K	9.3	20	46.8	42.5		9.5	44	49.1	28.7	
9.5		54.5	36.5	9.2		29.6	9.6	8.6		30.8	3.6		9.5		49.6	17.2		9.5	45	9.3	58.3	
8.8	17	10.9	15.8	Kb	9.5		40.3	46.6	9.5		31.0	52.1		8.3	21	11.8	55.5	K	8.7		25.0	57.0	K
7.8		25.7	36.3	L	9.5	38	0.4	39.9	9.0		37.0	27.3		8.8		30.4	58.0	K	9.0		48.3	17.9	
8.5		35.3	16.9	K	9.5		3.9	58.8	8.5		41.8	57.4	K	9.5		51.6	37.3		8.3	46	48.8	43.8	
9.5		40.7	37.3		6.8		14.0	57.0	Lb	9.5		51.0	8.8		8.8	22	18.8	31.4		9.0	47	1.5	1.7	
7.5	18	12.3	12.1	K	8.0		15.5	26.9	K	9.3	56	57.5	21.8		9.5		46.3	54.3		8.7		12.8	58.7	K
9.4		31.3	40.5	B	7.3		26.1	40.4	L	9.5	57	10.1	47.0		9.0		53.4	59.2	Kb	9.4		21.7	9.7	
9.5	19	4.4	5.1		9.5	39	7.2	17.5		9.5		27.5	57.4		9.0		58.1	10.5	K	9.2		35.2	12.9	aB
9.5		18.9	32.0		6.5	40	56.1	56.9	K	9.0		45.1	15.6	K	9.1		59.5	35.5		7.5		35.3	54.3	Kb
7.0		24.1	46.5	K	9.5	41	1.0	15.2		9.3	58	24.0	40.1	b	9.5	23	29.8	37.3		8.8		36.9	25.1	
9.5	20	7.6	10.5	B	9.5		28.6	45.0		8.8	59	7.0	24.5		9.5		39.8	35.2		9.0	48	23.8	3.1	
9.5		16.9	41.0		9.5		42.7	10.4		9.3		17.0	10.7		8.3	24	1.3	48.3		9.3		36.1	37.6	
9.5		34.5	28.6		8.6	42	18.7	17.6	K	9.0	0	21.5	38.8		8.5		12.0	6.1	K	9.5		42.3	59.6	
9.4		44.2	39.2	B	9.2		26.8	21.7		9.5		48.2	22.3		9.4		20.8	24.0		9.5		42.3	53.1	
8.8	21	2.9	52.7		9.5		27.6	16.2		9.2		51.6	59.0	b	9.5	25	54.3	27.3		8.5	49	13.7	54.8	K
8.7		37.4	51.0		8.9		54.9	38.0		9.5	1	6.5	44.6		9.2	26	35.4	9.5	b	9.5		52.8	25.8	
9.2		50.0	0.8	Bb	9.4		56.0	29.5		9.5		34.5	23.2		9.2		42.8	49.5		9.5		56.8	19.0	
9.2		54.3	1.1	B	9.3	43	48.5	14.0		9.3		36.0	44.0		8.2		57.6	56.9	K	9.5	50	41.1	36.3	
9.5	22	29.5	40.3		9.5		50.6	36.7		9.3		37.5	31.8		8.3	27	21.1	1.5	K	8.3	52	0.6	56.4	K
8.8	23	0.2	12.4	R	9.5	44	2.8	27.2		9.5	2	9.6	1.9		9.5		43.8	35.2		9.3		53.2	19.2	B
var		9.0	8.0	R	9.5		26.5	25.5		9.4		23.0	44.0		9.5	28	35.6	1.5		9.5	53	6.0	0.8	
9.2		32.1	35.7	b	9.4		27.1	6.0		9.5		49.5	21.2		9.5		48.8	26.2		9.5		6.3	53.8	
9.0		43.2	8.3	K	9.5		32.5	30.7		9.5		52.8	17.5		8.8	30	7.5	51.6		8.7	54	9.6	58.3	
9.5	24	7.5	18.7		9.3		46.0	17.2		9.5		53.8	4.0		9.3	31	5.1	56.9		8.5		18.1	34.1	L
9.5		26.5	35.9		9.3	45	12.5	50.0		7.4	4	13.1	46.9	L	7.2		6.5	48.3	P	9.5		47.1	57.7	
7.8		45.4	56.3	K	9.5		24.3	47.2		7.3		46.2	5.2	K	9.5		24.8	26.2		9.0		49.1	0.7	
9.3	25	5.8	58.6		9.0		35.4	32.7		9.5	5	5.3	57.6		9.5		45.6	8.6		8.9		55.4	4.0	
8.3		16.5	17.5	K	9.0	46	0.2	34.5	K	9.5		49.3	23.1		9.5	32	25.0	6.4		9.5	55	44.5	20.4	
9.3	26	23.2	22.5		4.5		4.0	28.6	K	9.5	6	6.3	44.1		8.3		38.3	17.9	K	9.5	56	32.6	7.6	
9.0		33.0	31.0		9.3		22.8	33.8	a	9.0		22.6	50.8		9.2		57.6	5.9		9.5		42.3	6.5	
9.5	27	3.5	26.5		9.2		38.5	54.8		9.3	7	8.3	59.2		7.8	33	15.8	15.6	K	9.0		50.8	55.3	
9.1		32.4	33.3		9.5		52.0	59.0		9.0	8	50.8	25.8		8.8		16.8	36.9		8.2	57	31.3	22.6	
9.5		38.7	36.3		8.0	47	17.3	39.7	K	9.5	10	5.3	53.1		9.2	34	4.5	50.9	b	9.3	58	20.7	41.9	
9.0		56.5	49.3		9.5		44.8	19.7		9.4		8.6	14.6	B	9.3		9.3	42.1		9.5		23.1	0.3	B
9.5	28	16.6	59.1		9.0		51.7	14.5		9.5	11	13.6	2.2		9.0		26.3	16.2		9.5		35.5	25.3	
9.5		26.2	30.5		8.4	48	5.2	51.5	Kb	9.5		27.3	20.0		9.5		54.8	10.7		8.0		53.5	43.6	
9.5		39.3	39.8		9.5		20.8	41.5		8.0		39.3	52.6	K	9.3	35	2.3	44.8		7.8	59	16.7	8.6	Kb
9.5	29	2.2	42.7		9.2	49	52.0	5.2	b	9.0		48.8	26.5		9.3		17.3	34.5	R	9.2		21.9	32.4	aB
9.0		11.2	22.3		9.3		55.3	27.0		7.8		57.8	9.1	K	9.5		35.8	52.8		9.5		21.9	29.1	B
9.0	30	49.8	30.8	R	9.5	50	26.3	19.0		9.5	12	8.3	48.7		9.0		43.3	16.9		9.0		59.9	51.8	
8.8	31	30.8	27.6	K	8.8		27.7	57.0	Kb	9.0	13	15.4	54.1	K	3.5		49.5	38.2	P	8.1	0	14.6	50.6	K
8.3	32	5.3	49.3	B	9.5	51	4.7	50.0		9.3	14	12.6	1.7		9.1	36	2.2	38.6	K	9.0		25.8	41.6	
8.0		14.2	42.8	Kb	9.5		37.5	15.2		9.5		22.3	45.2		9.3		18.1	48.3		9.5		42.2	16.7	B
8.8	33	13.5	59.5		9.5		37.7	47.2		9.5	15	26.3	44.8		8.3		19.5	12.4	P	9.0	1	24.1	12.1	
8.4		37.8	57.9	K	9.5		42.3	46.9		9.5		27.5	44.1		9.0	37	41.8	6.5		9.5		36.4	49.8	
9.5		49.2	40.5		9.3		51.7	15.5		9.3		28.3	53.2		9.0		42.4	3.3		8.5		36.9	18.0	
9.5	34	3.3	13.8		9.0		53.0	37.3		8.8	16	37.3	17.6	Kb	9.5	38	52.0	40.7		8.2		41.9	41.5	Kb
8.5		8.6	30.7	K	9.5	52	14.5	2.5		9.5	17	26.3	16.5		9.0	39	31.3	20.7		9.5		57.5	27.8	B
9.2		55.2	55.0		9.0		14.5	15.2		9.5		31.3	49.0		8.8		56.8	42.8	K	9.5	2	22.0	28.3	
9.2	35	3.4	55.0		6.5		36.9	24.1	P	8.8		50.2	57.2	K	9.5		59.8	29.3		7.7		24.1	29.9	K
9.1		36.1	44.3	aB	9.3	53	21.5	29.2		9.3	18	30.8	53.6		8.8	40	23.7	34.1	Kb	9.3		59.5	0.5	
9.5	36	11.9	6.3	B	8.5	54	8.6	58.4	K	9.5		38.2	39.5		9.5	41	32.8	50.3		9.5	3	29.1	21.5	
9.0		19.7	37.0		9.5		18.5	37.0		9.5		45.8	23.5		9.5		55.8	3.0		9.5		29.1	41.5	
8.0		21.1	51.8	K	8.7		19.7	10.8		9.5		54.9	58.0		8.8	42	50.9	0.1	K	9.2	4	35.8	3.1	
9.3		35.9	5.0		8.8		22.5	25.3		9.5	19	40.0	1.6	B	9.2	43	16.7	54.5		9.2	5	10.1	54.7	K
9.3		42.5	39.3		3.5		33.8	3.7	P	8.5		40.8	30.5	K	8.5		22.8	42.1		9.5		12.2	30.5	
9.5		47.5	10.1		9.4		36.9	58.1		9.5		51.6	1.3		8.0		50.3	27.9	Kb	8.3		18.1	8.9	Kb
6.8	37	6.9	28.7	K	9.3		41.5	43.7		9.0		59.8	53.6		9.3	44	16.3	43.8		9.5	6	34.9	26.7	
9.5		13.5	36.6		8.7		57.3	7.8	L	9.3	20	30.1	40.7		8.8		21.1	19.6	K	9.0		48.4	4.0	K
10pr.		+ 30.94	+ 3.11		10pr.		+ 30.97	+ 2.99		10pr.		+ 31.02	+ 2.85		10pr.		+ 31.08	+ 2.63		10pr.		+ 31.12	+ 2.39	

501–560

m	3ᵘ	+2°	
9.5	6′ 51.4	25.4	
8.5	7 5.9	14.3	
9.3	51.9	27.0	
9.5	8 17.4	17.5	B
8.9	30.0	51.7	B
9.3	43.4	19.1	
9.5	43.9	38.5	
9.5	9 7.0	41.0	
9.2	10.5	35.3	a
9.0	14.9	19.1	Kb
9.5	19.4	19.5	a
9.0	31.0	7.0	
9.3	31.7	15.7	
9.1	45.0	36.2	aB
9.5	10 27.2	30.2	
9.2	55.1	43.8	B
9.5	11 29.4	36.7	
5.3	46.3	50.9	P
9.5	51.4	34.0	
9.0	54.4	12.5	
9.2	54.4	46.8	L
8.8	12 27.3	6.8	
9.2	33.3	18.1	aB
9.4	35.6	20.3	a
9.3	52.9	41.5	
8.7	13 23.1	44.6	K
8.2	41.9	55.5	K
9.5	53.0	46.4	B
9.3	55.9	19.5	
9.3	14 30.0	8.8	
9.5	48.9	56.0	
9.5	54.4	43.3	
9.5	55.7	13.6	
8.3	15 47.9	19.5	
8.0	16 21.2	31.6	K
8.5	17 46.1	46.0	
9.5	55.4	18.1	
9.3	18 28.9	9.8	B
9.3	44.7	16.0	
9.0	19 3.8	49.4	
9.5	15.5	27.0	
8.5	22.7	58.3	K
9.5	29.0	36.2	
9.4	30.0	29.4	B
9.5	37.0	23.3	
9.4	52.8	33.4	
9.1	53.8	23.6	aB
8.7	20 0.6	40.8	B
9.5	35.6	5.0	
9.5	21 21.9	15.0	
9.5	27.6	47.8	R
6.5	31.2	45.0	Pb
9.5	59.4	52.4	
9.5	23 3.0	17.0	
9.5	31.1	0.0	B
8.5	53.9	9.9	Kb
8.3	25 5.9	39.2	K
9.5	16.0	57.0	B
9.0	26.0	5.6	Kb
9.5	47.4	57.8	
10pr.	+ 31.16	+ 2.20	

561–620

m	3ᵘ	+2°	
9.0	26′ 19.4	24.7	
8.1	39.5	56.7	L
8.5	27 18.4	52.3	K
9.5	28.5	10.4	
9.5	36.2	28.7	
9.4	47.5	0.4	
9.5	28 18.2	49.9	
9.3	40.4	37.7	
9.5	29 3.1	25.1	
9.5	24.1	43.0	
9.4	48.6	47.5	B
9.3	30 9.6	28.8	
9.5	19.9	8.9	
8.3	31 10.0	25.4	K
8.0	10.4	14.3	K
8.8	17.6	24.0	
8.0	23.4	17.0	K
9.5	34.4	36.8	
8.5	47.0	5.5	
9.5	32 11.6	12.0	
5.8	18.8	36.5	P
9.5	41.4	34.5	
9.1	33 26.5	8.3	aB
8.0	29.6	28.6	Kb
9.3	31.9	48.5	
9.5	34 27.0	15.1	
8.3	38.4	57.7	K
9.3	44.9	15.8	
9.5	45.8	29.3	
9.5	35 2.5	20.0	B
9.0	21.4	15.2	K
9.5	24.2	41.7	
9.5	37.0	32.7	
9.5	56.4	19.0	
8.9	36 17.4	58.7	K
9.0	41.5	17.5	K
9.0	56.0	58.9	Kb
9.5	57.6	40.3	
9.4	37 11.0	18.3	B
9.3	20.7	31.1	
9.5	27.4	15.1	
7.5	30.5	9.4	K
8.0	38 0.6	46.9	K
8.5	29.5	47.3	K
8.5	29.8	10.0	
9.3	39 28.5	22.0	
9.5	40 7.9	42.5	B
8.3	37.9	18.9	
9.5	48.3	46.1	B
9.5	41 49.6	27.1	
9.5	49.9	47.5	
8.4	52.7	3.1	K
9.3	42 0.6	27.2	
9.3	27.9	46.4	
9.3	32.6	14.1	K
9.5	51.9	33.7	
9.5	43 26.9	14.6	
8.3	44 12.0	19.7	
9.2	44.0	49.7	b
8.4	45 3.0	4.2	K
10pr.	+ 31.19	+ 1.98	

621–680

m	3ᵘ–4ᵘ	+2°	
9.5	45′ 6.0	58.0	
9.5	17.0	24.9	
9.3	46 38.0	3.4	
9.5	47 43.5	46.5	
9.5	48 29.6	44.1	
9.5	45.3	21.1	
9.0	49.7	1.5	
7.0	49 3.5	38.3	K
8.8	25.7	32.5	K
9.3	41.3	58.8	
9.3	50 5.0	45.9	
9.0	40.7	22.2	
8.5	51 14.2	4.9	K
9.3	46.5	1.0	
8.5	59.4	15.2	K
9.5	52 39.5	35.6	
9.2	53 17.5	51.5	b
9.3	25.7	16.2	
9.1	54 43.3	0.3	aB
7.8	55 45.5	39.3	K
7.7	47.9	46.7	K
9.5	56 14.5	32.6	B
9.3	18.6	10.1	
9.5	25.6	33.9	
5.8	34.8	25.5	K
9.4	49.9	17.8	
9.3	57 45.6	51.4	
9.5	59 35.6	6.5	
8.7	0 13.7	20.3	K
9.4	20.7	1.8	
9.0	20.7	44.8	
9.5	1 0.0	37.3	
9.0	40.6	16.5	
8.7	2 1.0	52.6	K
7.1	9.3	56.2	Lb
9.5	39.0	39.0	
9.0	4 10.0	15.5	
9.2	5 13.5	22.0	aB
9.5	33.0	16.9	
9.5	44.0	1.3	
8.5	48.6	30.3	K
9.5	6 19.0	8.0	
9.0	20.0	44.4	
9.3	50.0	9.9	
9.0	54.1	37.5	K
9.3	7 25.5	12.5	
8.5	32.8	53.1	K
9.5	8 13.6	58.9	
9.0	56.3	17.5	
8.2	9 2.0	25.8	B
9.0	28.5	46.8	
9.0	46.0	3.7	
7.7	47.5	10.1	K
9.3	47.7	50.0	
9.5	51.6	53.7	
9.5	56.1	12.6	
9.5	10 7.4	0.7	
9.3	51.6	10.6	
9.2	51.8	0.8	
8.2	11 2.7	6.2	K
10pr.	+ 31.22	+ 1.67	

681–740

m	4ᵘ	+2°	
8.5	11′ 9.5	47.8	L
9.3	22.8	55.0	
9.0	28.1	19.5	
9.3	30.1	44.3	
8.0	12 5.5	38.2	K
9.5	43.0	59.0	
9.3	58.0	23.6	
9.0	13 22.5	35.0	
9.2	28.0	55.3	
9.5	36.1	43.1	
9.5	14 1.1	50.0	
7.5	14.3	3.1	L
9.5	36.1	33.8	B
9.3	46.6	44.6	B
8.4	53.7	43.5	
7.8	15 24.1	33.8	K
9.5	37.0	14.9	
9.0	49.8	44.8	K
9.5	55.1	1.3	
8.5	16 9.6	42.5	K
9.5	13.1	29.3	
8.0	53.0	8.8	Kb
9.5	17 10.8	46.2	
9.5	35.7	2.8	
9.0	50.3	1.2	
8.5	18 6.3	35.2	K
9.0	57.8	20.2	
9.2	19 1.2	34.9	K
8.8	5.2	42.8	K
9.5	17.9	52.8	
9.5	31.6	54.9	
9.5	44.7	30.7	
9.5	20 5.0	37.9	
9.5	11.7	26.3	
9.0	40.4	45.9	
9.0	43.4	24.6	
9.5	47.7	53.8	
9.5	47.8	12.1	
9.5	52.5	9.3	
8.3	21 16.9	3.3	K
9.5	28.0	37.0	
9.5	22 1.4	6.7	
9.5	27.1	44.4	
9.5	23 11.7	45.9	
9.5	33.9	0.5	
8.5	35.4	35.5	
9.0	45.4	26.9	
9.5	24 7.8	50.8	
9.3	39.4	16.6	
9.3	26 46.4	26.3	b
9.5	51.0	31.3	
9.5	57.0	0.8	
9.3	28 19.3	27.5	
9.3	32.4	30.3	
9.2	45.8	46.7	b
8.8	29 24.0	31.8	
8.8	30.4	16.3	K
8.8	34.8	24.5	K
9.5	37.5	9.0	
9.3	30 1.3	21.8	
10pr.	+ 31.25	+ 1.42	

741–800

m	4ᵘ	+2°	
9.5	31′ 3.7	49.7	
9.2	13.7	8.6	b
9.5	15.7	49.0	
9.0	59.4	55.6	K
9.5	32 5.4	9.3	
9.3	33 6.4	6.9	
8.0	24.6	13.4	K
9.5	36.5	1.8	
9.3	51.4	58.5	
9.5	59.3	8.0	
8.0	34 40.4	42.7	K
9.5	57.4	36.6	
8.5	35 24.5	8.4	K
9.5	50.8	59.7	B
9.4	36 3.9	45.0	B
9.0	39.0	8.0	B
9.5	41.7	41.7	
8.5	37 7.9	56.3	K
9.0	40.6	30.8	K
8.5	46.6	21.4	K
9.2	50.9	30.2	
9.3	38 9.9	54.4	
8.5	15.7	45.3	
8.3	30.6	49.6	L
8.7	36.5	53.6	L
8.8	38.0	35.2	
9.3	58.7	26.2	a
8.8	39 11.4	27.0	
9.3	13.1	12.6	
9.5	34.4	50.7	
8.8	51.8	39.7	
9.2	40 44.2	26.6	K
7.2	53.8	27.7	K
9.3	55.8	22.0	B
8.8	41 2.0	51.9	
9.5	6.5	57.6	B
9.4	13.0	18.5	
9.5	20.0	59.4	
9.2	49.8	50.7	
9.5	52.6	21.7	
8.8	42 0.8	41.4	
9.5	5.4	58.7	
9.5	15.8	50.7	
9.5	17.8	26.2	
9.3	33.0	55.9	
8.8	40.6	1.3	
9.0	40.6	29.8	
9.5	43 18.3	47.0	
9.5	37.0	30.2	
9.2	41.1	52.0	
9.5	44 20.0	20.3	
9.5	35.0	58.7	
9.4	43.1	55.1	
9.4	47.3	42.7	B
9.5	49.1	14.5	
9.3	51.2	2.6	B
9.4	57.0	8.6	
9.5	45 1.5	42.5	B
9.0	10.5	27.3	
5.0	50.0	16.2	K
10pr.	+ 31.27	+ 1.14	

5° — 5°

+2°

801—860				861—920				921—980				981—1040				1041—1100			
	4ᵘ		+2°		4ᵘ—5ᵘ		+2°		5ᵘ		+2°		5ᵘ		+2°		5ᵘ		+2°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.2	45	50.6	19.7	a	9.0	59	10.5	9.1	K	9.5	12	26.0	6.7		9.5	23	2.2	29.5		8.9	35	8.4	37.5	
9.5		59.7	6.5		9.3		14.4	32.9		9.1		28.2	53.1	K	9.5		11.3	24.5		9.0		19.3	55.3	?
9.5	46	5.3	59.0		9.5		38.8	53.6		9.3	13	8.8	0.7		9.0		47.2	57.9		9.5		37.2	19.0	
9.0		9.4	20.0	K	9.4		43.9	29.1		7.2		9.6	23.9	K	9.5		48.8	29.5		9.5		48.8	45.9	
9.3		15.2	12.7		9.1		47.9	15.3	K	9.5		11.9	2.4		9.5		53.9	27.3		9.5	36	28.6	44.3	
9.2		17.0	22.0	a	9.5		49.5	31.2		7.3		16.1	46.6	Kb	8.1	24	6.4	43.8	B	9.5	37	19.3	44.1	
9.0		21.1	51.7	K	9.5		57.1	48.8		9.4		42.5	31.3	B	9.5		12.3	10.7		9.5		54.5	50.2	
9.3		22.1	27.9	B	8.2	0	0.6	16.8	K	9.5		49.9	58.4		9.5		17.7	38.0		9.5	38	7.3	52.8	
9.3		35.6	33.2		9.5		36.7	5.5		9.4		50.7	36.6		9.4		28.3	29.9		9.4		28.6	7.5	R
3.5		42.2	13.4	K	9.2		50.6	16.1		9.4	14	1.0	29.8		9.5		38.0	35.7		9.5		30.2	23.3	
9.0	47	4.0	7.1		9.5		53.6	41.2		9.2		15.0	44.4		8.8		45.4	10.4	K	9.5		53.9	6.7	
9.3		15.6	16.2	B	9.4		57.9	0.1		9.5		28.4	25.7		8.3		53.7	32.0	L	9.5		58.5	4.3	
8.3		42.4	44.1	K	9.5	1	12.3	38.9		8.3		55.7	50.1	L	9.3	25	11.8	17.9		9.5	39	4.1	42.5	
8.8	48	3.9	34.4		8.7		48.1	55.1	K	8.5	15	1.9	27.9	L	9.0		18.9	33.8		8.2		8.5	38.9	L
9.5		6.6	8.1		9.4		55.7	9.0	B	9.5		5.6	53.6		9.0		28.2	23.7	K	8.6		9.4	10.8	
8.8		34.4	41.7	K	8.8	2	28.9	45.2	K	7.6		10.5	39.3	L	9.3		32.1	21.9	a	9.0		12.6	18.8	
9.5		36.7	50.0		9.5		36.6	26.7		9.5		45.9	29.8		9.5		42.4	40.0		9.4		26.6	54.7	
8.2		38.6	56.6	K	9.5		37.1	8.8		9.5		57.1	14.1		9.2		47.9	16.1	K	9.0		33.1	34.3	
8.5	49	22.0	32.3	K	9.5	3	5.3	27.5		9.5	16	3.4	19.4		9.2		52.7	33.2		9.5		39.0	44.5	
9.0		31.9	56.1		9.5		21.3	56.5		9.5		12.0	0.7		9.5	26	2.4	6.7		9.0		42.6	22.8	
9.0		42.9	49.2		9.5		26.7	33.8		8.6		20.9	8.5		9.2		18.6	37.6		9.0		45.7	28.5	
9.5		59.4	38.2		9.5		31.9	33.8		9.3		33.9	20.0		9.5		23.6	32.5		9.0		46.7	0.4	K
~~9.5~~	50	~~0.1~~	~~49.8~~		9.4		48.8	17.3	B	9.3		43.9	13.7	a	8.6		29.0	57.6	K	8.4		57.8	51.3	K
9.3		10.9	37.9		9.5	4	15.6	5.7		9.5		50.0	46.9	B	9.5		35.4	46.1		8.8	40	58.1	14.9	K
9.5		22.4	53.8		9.5		21.6	8.7		9.1		50.7	24.6		9.3		54.6	49.0	B	9.2	41	2.1	48.0	Rb
9.3		46.2	2.7		9.5	5	10.5	37.2	Kb	9.5		59.9	41.6		9.5	27	14.5	52.5		9.5		22.1	2.2	
9.3		54.6	36.5		9.5		13.4	47.8		7.4	17	4.3	13.3	L	9.1		19.8	1.0	aB	9.3		30.8	54.0	
9.0	51	14.6	37.9		4.8		41.7	40.5	K	9.4		4.8	37.3		9.5		30.7	54.7		9.5		53.7	12.0	
9.3		54.5	55.9		9.2		58.6	27.1	K	9.3		5.0	43.2		9.5		33.5	5.3		9.5	42	20.5	39.1	
9.5		59.6	27.8		9.2	6	7.6	1.5		9.4		13.8	37.7		9.5		50.0	42.1		9.0		33.1	25.6	
9.2	52	6.9	34.4	b	9.5		12.1	17.5		9.5		18.9	38.2		9.5		58.4	1.9		9.0		39.2	22.4	
9.3	53	5.6	53.0		9.0		12.1	11.9		8.7		35.6	46.6	K	9.2	28	8.4	32.3		9.5		54.4	32.8	
9.5		16.6	43.4	B	9.5		17.1	43.3	B	9.0		39.0	36.3		9.5		19.4	24.0		9.5	43	17.5	57.8	
9.5		20.2	45.0	B	9.5		45.6	33.0		9.5		40.5	23.3		9.4		25.4	5.7		9.5		18.2	7.5	
9.2		30.4	45.1	B	9.2	7	2.7	23.6	K	9.3		51.3	12.8		9.3		44.8	24.9		9.5		46.8	15.3	
8.5	54	3.4	42.9	Kb	9.5		5.3	58.5		9.5		54.0	45.0		8.9	29	6.9	35.5	Kb	9.4	44	6.3	41.3	
9.3		17.7	16.2		9.2		26.9	25.2	K	9.5		56.7	12.7		9.5		40.3	21.3	R	9.5		8.9	21.8	
9.0		23.8	25.5		9.5		30.7	27.0	K	9.5		59.7	42.0		8.9		51.9	49.4	K	9.5		40.8	37.7	
9.5		32.7	36.9		9.4		32.6	55.7		9.5	18	6.2	15.7		9.5	30	0.4	47.2		9.5		52.9	58.9	
9.5		34.7	32.8		9.5	8	4.2	21.3		9.0		39.0	48.6		9.0		4.6	13.7	K	9.5	45	8.9	22.9	K
9.5		52.6	46.2		9.1		9.4	48.7	b	7.6		55.9	47.5	L	9.1		14.4	39.2		9.0		30.5	47.5	Kb
9.3	55	9.4	53.7		9.4		11.1	27.6		5.3	19	15.1	58.0	L	9.5		18.0	17.9		9.4		58.4	6.9	
9.0		12.2	6.1		9.5		24.3	15.0		9.5		33.0	38.6		9.5		20.0	50.1		9.5	46	7.5	56.7	
9.5		23.7	32.5	B	9.5		48.4	35.6		9.4		36.2	29.8		9.5		48.0	28.7		9.4		24.8	7.8	
9.5		32.2	42.3		9.4		54.2	47.8	B	6.9		42.7	12.8	K	9.5		59.5	2.1		9.1		56.6	7.6	b
9.5		39.1	39.6		9.5		55.6	26.0		8.9		46.2	5.3	K	9.5	31	13.0	56.2		9.5	48	17.1	39.5	
9.5		47.9	55.5		9.5	9	5.7	48.8		9.5	20	7.1	54.7		9.5		17.5	2.3		9.1		28.8	24.8	b
9.3	56	1.3	5.8		9.5		44.3	22.5		9.3		16.2	40.0	B	8.4		17.7	46.5	K	9.5		58.6	46.2	
8.5		4.6	21.3	Kb	9.5	10	4.2	46.1		9.4		25.4	39.7	B	9.5		35.5	30.3		9.5	49	11.4	52.9	
9.5		15.7	53.1		9.5		15.9	9.1		9.5		27.4	40.7		9.4		59.2	28.8		9.2		31.1	49.0	b
9.0		15.7	31.0		9.5		28 6	8.0		9.5		28.7	20.5		9.5	32	2.2	6.6		9.5		44.1	7.7	
8.7		28.6	45.0		9.5		40.0	46.4		9.2		36.4	15.0	K	9.0		40.4	55.9		9.2		55.1	1.7	
9.3	57	7.9	15.0		9.5	11	6.7	8.7		9.3		42.4	5.4		9.2		41.6	51.1		9.5	50	1.0	41.5	
8.3		26.6	27.0	L	9.5		14.8	38.2		8.0	21	16.7	2.5	K	9.5	33	5.9	20.7		9.5		2.7	14.9	
9.4		30.8	3.8		9.5		21.0	58.9		9.2		54.6	44.7	b	9.5		35.3	25.1		9.1		11.8	34.5	B
9.5		34.3	24.5		6.1		37.0	26.7	K	9.5	22	4.9	27.1		8.8		46.6	17.0	K	8.5		17.1	2.6	K
9.5		57.7	44.5		9.5		39.2	35.3		9.5		13.9	23.5		9.5	34	11.1	49.2		9.5		30.7	46.5	
9.5	58	42.4	56.2		8.8		45.5	59.0		9.5		27.6	14.9		9.5		37.5	26.2		9.5	51	21.5	13.6	
9.0		43.0	45.5		9.5	12	7.9	8.0		9.5		46.1	35.7		8.5		43.8	33.4		9.5		37.4	40.0	
8.3		48.2	28.7		8.0		15.7	22.4	K	9.5		54.0	39.0		7.8		45.5	19.1	Kb	9.5		39.0	17.5	
10pr.		+ 31.28	+ 0.98		10pr.		+ 31.29	+ 0.78		10pr.		+ 31.29	+ 0.62		10pr.		+ 31.29	+ 0.66		10pr.		+ 31.30	+ 0.25	

m				
9.5	49	48.9	49.2	a

1101—1160

	5ᵉ—6ᵉ			
m	′	″	′	
9.3	51	54.4	27.2	K
8.3		55.4	27.4	Kb
8.8	52	1.2	52.5	
8.7		7.4	57.1	L
9.5		20.2	26.4	a
7.6	53	14.6	54.2	K
9.3		15.1	13.9	
9.5		18.8	40.3	
9.5		47.1	28.7	
9.1		52.0	40.6	aB
7.8		56.1	54.3	K
9.1	54	13.8	41.5	aB
8.6		25.9	10.3	K
9.2	55	23.1	26.6	b
9.5		37.5	28.5	
9.5		42.7	28.8	
9.5		44.1	44.0	
7.8	56	23.0	51.9	K
9.5		28.1	0.8	
9.1		50.8	5.3	K
9.5		51.7	27.8	
9.5	57	6.5	46.8	
9.2		14.3	46.0	
9.5		16.8	43.2	
9.5		27.7	31.6	
8.4		31.3	7.0	K
9.2	58	20.2	59.4	
9.5		21.2	44.8	
9.0		47.6	27.3	
9.5		49.3	10.2	a
9.5	59	10.4	38.3	
8.0		23.6	11.5	K
9.1		29.7	53.9	
9.5		36.5	58.1	
9.5		38.2	33.4	B
9.5		44.0	1.8	R
8.7		53.1	8.9	K
9.5	1	16.0	12.0	
6.5		24.6	31.5	K
8.0		25.5	30.9	K
9.5		34.0	42.7	
9.2		38.2	59.9	
9.5	2	13.5	10.6	
7.5		14.1	53.8	K
9.3		23.5	35.6	
9.5		43.0	0.5	
7.7		49.1	55.9	K
9.5	3	10.5	7.4	
8.0		30.0	21.9	K
9.5		43.2	27.7	
9.5		46.1	26.1	
8.3	4	12.1	30.2	K
9.5		27.0	6.6	
9.3		37.2	28.9	
9.5		53.1	39.7	
9.5		59.7	45.1	
9.5	5	24.8	59.9	
8.6		27.5	52.4	K
9.4		29.3	23.2	
9.5	6	2.2	46.2	
	+		+	
10pr.	31.30		0.01	

1161—1220

	6ᵉ			
m	′	″	′	
8.9	6	9.4	2.6	
9.5		10.1	59.2	
8.2		16.6	51.5	L
9.5		26.0	46.8	
8.2		36.3	36.8	L
9.5		44.0	19.2	
9.5		55.0	57.0	
9.3		55.1	11.8	
9.5		56.2	17.3	
9.5		59.7	54.5	
7.5	7	4.2	19.8	K
9.0		6.4	40.9	K
8.9		7.2	54.5	B
9.5		55.5	45.9	
9.0		56.0	10.7	
9.2		58.2	34.2	
9.3	8	2.0	8.7	
9.3		4.2	16.5	
9.5		10.7	57.3	
9.3		16.2	26.9	
9.5		31.0	10.7	
9.4		39.3	53.7	B
9.5	9	16.6	53.2	
9.5		37.2	34.0	
9.5	10	43.6	19.8	
9.5	11	1.1	14.3	
9.2		18.2	31.5	b
9.5		49.1	15.1	
9.5	12	13.6	52.1	
9.5		15.2	17.6	
9.2		26.7	56.3	K
9.5		41.2	19.5	
9.3		42.0	45.2	
9.5	13	8.2	31.2	
9.5		22.1	25.0	
7.8		28.3	37.9	K
7.0		52.2	20.1	K
*9.0	14	4.3	36.8	
*9.0		8.8	27.8	
7.9		13.2	24.6	Kb
9.4		20.2	25.6	
9.2		20.7	20.1	
9.0		29.1	11.0	
9.0		40.0	6.8	
9.0		51.0	7.3	
9.4		59.2	33.1	
9.2	15	12.9	48.2	
9.5		17.9	35.5	B
9.4		28.6	5.7	B
9.0		41.6	49.2	
9.1	16	4.9	3.2	
9.5		10.1	7.0	B
7.3		13.5	44.5	L
9.5		31.3	37.8	
9.4		31.8	37.5	
9.5		44.7	56.2	
9.0		58.0	6.2	
9.5		59.1	12.3	
9.0	17	3.7	55.6	
9.5		16.3	35.3	
	+		—	
10pr.	31.30		0.17	

1221—1280

	6ᵉ			
m	′	″	′	
9.5	17	18.1	13.5	
8.9		27.8	0.7	
9.3		32.0	25.1	
9.5		54.4	39.3	
9.5	18	3.1	58.7	
8.7		8.5	45.4	
6.9		13.6	21.2	L
9.5		18.7	56.4	
9.4		21.6	52.1	
9.2		26.6	49.1	
9.5		42.2	26.0	
8.0		46.2	24.3	Lb
9.5		52.3	32.5	B
9.5		57.9	4.0	
9.5	19	5.2	18.2	
9.2		36.1	13.7	
6.1		44.8	59.8	L
9.5		50.5	45.1	
9.0	20	0.1	13.2	
9.0		0.9	1.6	
9.5		3.1	25.6	
9.5		6.0	7.6	
9.3		12.4	43.9	
7.1		43.8	0.5	K
9.5		44.7	56.5	
9.1		54.2	30.4	
9.4	21	8.5	48.5	
9.5		13.2	57.1	
9.0		18.1	13.7	
9.5		19.5	11.0	
9.5		24.0	8.2	
9.5		40.2	14.7	
6.8		40.5	44.3	K
9.2		46.0	9.0	
9.3		48.4	40.3	
9.4		49.7	49.8	aB
9.5		51.9	59.8	
9.2		53.3	50.0	aB
9.5	22	11.9	1.6	
9.1		22.6	52.0	
9.3		30.2	29.8	
8.9		41.7	56.5	
8.7	23	14.3	38.2	L
9.3		21.8	52.8	B
9.4		23.3	52.0	
8.9		30.2	47.4	
9.3		32.6	28.3	
9.5		33.7	2.4	
9.5		45.5	45.2	
9.2		50.6	51.3	
9.5		51.4	42.3	
9.2	24	10.6	52.9	
7.8		12.0	6.8	K
8.5		23.8	1.2	K
9.5		35.9	3.0	
9.5		39.1	14.8	
9.0		51.1	11.5	
9.5		54.4	25.9	
9.5	25	8.9	39.5	
9.5		33.3	35.4	
	+		—	
10pr.	31.30		0.30	

1281—1340

	6ᵉ			
m	′	″	′	
9.5	25	37.3	37.3	
9.5		42.0	9.6	
9.5		51.6	53.4	
9.5	26	2.3	36.7	
9.1		4.9	2.2	
9.5		6.5	48.1	
9.5		10.0	25.6	
9.1		13.9	5.1	
9.3		14.6	15.4	
9.0		25.2	20.1	
9.5		41.0	23.7	
8.7		42.2	29.5	
9.5		42.9	54.0	
8.7		49.1	13.5	
8.3		49.8	38.5	B
9.5		52.9	4.6	
9.5	27	4.7	56.2	
9.5		15.8	59.3	
9.0		21.6	52.6	
9.3		40.4	42.6	
8.8	28	0.2	26.4	K
9.0		8.6	49.2	K
8.7		31.6	12.3	K
9.5		33.8	58.9	
9.5		34.4	42.2	
9.2		39.1	12.3	a
9.3		39.9	4.2	B
9.5		42.5	7.1	
9.4		44.4	9.5	
9.2	29	5.4	3.9	aB
9.5		16.7	54.7	
9.5		17.1	46.0	
9.5		27.1	15.7	
9.4		37.1	27.0	
6.1	30	5.6	49.6	L
8.9		7.0	3.4	
9.5		9.0	7.4	
8.2		9.6	13.3	
9.4		11.8	53.2	
9.0		13.9	54.8	
9.5		16.5	39.6	
9.3		19.1	37.0	B
7.5		19.7	23.3	Lb
9.5	31	9.9	4.6	
9.5		11.7	54.6	
9.5		11.7	25.4	
9.2		26.9	3.5	aB
8.9		33.2	27.5	
9.0		34.1	13.5	
9.5		34.2	34.0	
9.0		40.4	17.1	
8.7		40.8	1.1	K
9.5		42.7	57.4	
8.4	32	1.2	26.1	K
9.5		1.6	28.7	
9.0		10.0	10.4	
9.5		11.7	44.8	
9.5		12.2	29.4	
9.1		24.7	54.4	b
8.8		29.2	16.8	K
	+		—	
10pr.	31.30		0.42	

1341—1400

	6ᵉ			
m	′	″	′	
9.5	32	32.4	41.1	
9.5		35.2	30.3	
9.0		44.4	39.3	
8.0		50.4	41.2	L
9.5	33	0.2	32.6	
9.5		13.4	39.8	
9.1		27.0	22.6	aB
9.5		30.7	17.9	
9.5		35.9	4.8	
9.5		39.5	44.4	
9.3		48.1	14.3	
9.3		50.0	6.8	
9.0		57.0	26.2	
9.0	34	0.0	11.0	
9.5		17.1	26.2	
7.7		20.4	43.1	K
8.5		42.3	36.5	K
9.5		58.1	27.0	
9.3	35	2.2	19.9	
9.5		18.0	9.6	
9.3		24.6	51.5	
9.3		26.1	29.2	
9.5		43.5	46.2	
9.3		45.7	54.8	
9.5		57.2	34.2	
9.5	36	7.5	24.2	
9.0		26.7	55.9	K
9.4		28.9	5.4	
8.8		35.2	32.3	
8.5		42.5	57.3	K
9.5	37	12.3	48.5	
9.5		14.6	52.0	
9.5		17.3	25.7	
9.2		17.8	18.2	
9.2		30.4	41.7	
8.6		52.2	21.5	K
8.9		57.7	17.6	K
9.0	38	4.1	28.1	
7.8		15.4	39.0	K
8.3		34.5	47.9	Kb
9.5		42.3	35.1	
9.5		48.6	15.6	
9.4		48.7	23.5	
9.4		54.7	16.6	B
9.0		58.4	27.6	
9.4		58.9	10.3	B
9.5		59.6	52.1	
9.5	39	11.6	50.9	
9.3		14.3	37.8	
9.5		29.7	54.2	
9.0		32.0	8.5	
9.4		40.3	34.8	
8.7		50.5	47.6	
9.3		54.0	6.5	
9.1		56.1	12.6	K
9.2		59.2	30.9	
4.9	40	17.2	34.2	L
9.5		18.4	40.8	
9.4		20.8	10.1	B
9.5		25.9	11.0	
	+		—	
10pr.	31.29		0.54	

1396ᵉ
9.6 | 14 | 4.7 | 56.8 | B

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ		+2°			6ᵐ		+2°			6ᵐ—7ᵐ		+2°			7ᵐ		+2°			7ᵐ		+2°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.1	40	48.4	43.4		9.3	47	26.7	57.2		9.5	54	55.1	13.7		9.0	2	18.4	59.3	K	9.3	12	1.6	45.7	
9.5		57.5	27.5	B	9.3		45.2	22.4		9.3		58.6	48.7		9.5		26.8	50.3		9.5		13.8	59.0	B
9.1		58.9	1.8	a	8.8		52.5	45.4		8.8	55	5.6	62.9	K	9.5		45.1	40.6		8.8		19.4	34.7	B
9.5		59.0	23.6	B	9.5		58.2	19.3		9.0		17.6	49.5		8.8	3	7.6	42.6	L	8.3		27.6	42.3	K
9.5		59.5	47.6		9.5	48	19.2	17.6		9.5		27.5	44.0		9.5		10.4	5.7		9.0		35.2	1.0	
8.0	41	14.3	9.9	B	9.2		25.8	28.6	B	9.3		29.5	44.8		9.5		13.6	22.0		9.3		38.6	24.4	
9.5		21.7	56.8		8.6		26.6	32.6	K	9.5		31.8	1.5		9.5		15.7	16.2	B	8.9	13	7.4	35.0	
9.3		22.9	9.1	a	8.2		38.2	30.3	K	9.4		34.5	24.2	aB	9.5		26.5	54.5		8.8		17.8	30.9	
9.5		31.8	1.6		9.5		40.3	37.9		9.5		54.3	55.5		9.5		28.0	2.2		9.0		26.8	11.2	
9.3	42	0.1	12.6		9.2		42.6	49.9		7.5	56	0.3	39.0	K	8.9		34.2	23.2	K	9.2		53.2	8.4	
9.5		1.0	8.7		9.5		58.0	10.4		8.4		30.0	6.5	B	8.8		53.2	34.4		9.3		53.4	21.5	
9.4		3.5	6.4		9.3	49	2.5	46.5		9.3		55.2	9.1	B	9.5	4	8.1	55.3		8.3	14	7.9	57.1	K
9.5		3.7	9.8		8.6		13.7	22.8		9.4		55.3	13.2		9.3		25.7	20.6		9.0		16.0	39.9	B
8.9		5.5	5.7	K	9.0		22.7	25.7		9.1		56.9	3.4		9.5		45.2	16.4		8.0		40.4	25.4	K
9.0		18.1	6.6	B	9.5		31.2	30.0		8.7	57	7.6	28.1	K	9.5		49.1	36.6		9.4		46.4	1.4	
9.5		10.7	55.9		9.5		32.7	41.8		8.8		19.3	25.8	K	9.3		54.5	45.1	b	9.5		46.8	31.0	
9.2		33.7	24.1	K	9.5		33.0	42.3		9.1		32.6	52.6	b	9.5		57.6	2.5		9.5		47.4	9.2	
9.0		40.3	37.9		9.1		35.7	55.4		9.4		44.7	58.2		9.0	5	9.6	20.7		9.3		59.4	58.4	B
9.0		42.0	8.7	K	9.2		37.9	4.6	b	9.3		44.9	4.3		9.5		18.5	50.1		9.3	15	6.4	58.6	B
9.5		49.3	13.7		9.2		40.9	4.7	b	8.7		49.1	28.4	K	9.5		29.1	27.4		9.3		15.4	37.8	
9.5		54.8	0.4		9.3		46.7	30.5		9.3		51.1	15.4		9.5		44.9	59.6		8.8		40.8	27.4	
9.5	43	8.9	1.7		9.2	50	9.2	31.5		9.5		53.2	34.0		9.5		53.3	6.3		8.7		47.2	40.9	
9.3		17.2	34.0		8.0		24.1	29.0	L	9.5		55.7	2.5		9.3		59.8	7.3		8.8	16	15.9	18.0	B
9.4		18.7	45.3	B	8.8		40.3	35.1		9.5	58	0.9	2.5		*9.5	6	1.4	37.5		8.0		28.6	15.8	K
9.4		23.9	45.9		9.5		45.3	38.4		9.5		8.2	29.8		9.3		7.6	16.6		9.5		34.4	53.3	
9.5		24.2	45.1		9.5		51.9	2.9		9.4		19.3	1.3		9.5		17.1	14.5		9.0	17	7.0	11.2	K
9.1		29.6	1.3	aB	9.5		53.6	52.0		9.5		28.4	40.6		9.5		27.1	14.9		9.3		8.2	51.3	
9.5		33.8	35.9		9.2		53.8	36.2		9.5		35.3	23.2		9.5		35.3	34.4		9.5		12.8	18.7	
9.5		35.2	18.7	a	9.5	51	8.3	21.2		9.5		35.7	58.1		9.5		40.2	23.0		9.3		28.6	54.7	
9.5		35.7	58.2		9.5		13.7	21.9		8.5		51.2	19.3	Kb	9.5		51.4	47.7		9.5	18	13.0	52.7	
9.5		42.5	52.6	B	9.5		26.5	44.8		9.5	59	4.6	50.7		9.5	7	27.3	15.1		9.3		17.6	22.3	
8.3		43.2	18.2	K	9.1		28.2	29.5		9.5		29.2	34.0		9.5		38.0	52.0		9.4		21.8	1.5	B
9.2		56.3	56.8		9.5		54.6	32.6		9.3		31.6	5.9	B	9.2		39.2	56.1		8.8		39.2	32.0	
9.5		58.3	56.3	a	9.5	52	5.3	21.8		9.5		34.2	49.1	B	9.3		40.0	4.6	B	9.5		42.6	0.8	
9.3		59.0	11.5		8.6		6.7	18.2		9.0		44.8	0.9		8.9		49.4	19.4		9.3	19	43.0	30.7	
9.2		59.3	45.3	aB	8.8		13.7	54.5		9.1		44.8	56.2		9.5	8	13.2	13.2		9.5		43.8	29.2	
7.0	44	2.6	49.0	K	8.8		18.1	13.2		9.5		45.2	35.4		9.3		16.8	26.3		8.5		43.8	45.4	K
9.5		5.1	15.4		9.5		19.2	32.6		9.5	e	18.1	11.8		9.5		28.7	28.0		9.5	20	13.6	43.3	
9.5		5.8	59.8		8.1		41.4	42.9		9.0		25.5	55.1	Kb	9.4		35.5	17.9	B	8.8		18.6	54.8	
8.6		12.7	53.4	K	9.5		50.3	51.2	B	9.5		26.5	50.4		9.3		55.1	58.1		9.2		27.4	23.7	
9.3		52.2	18.2		9.0		51.6	11.0		9.5		26.6	30.8		9.5		56.7	39.8		7.8	21	8.9	34.4	B
9.5		54.3	36.7		7.8		52.0	7.6	K	9.5		35.9	3.2		9.5		56.8	25.0		9.3		26.3	59.3	
9.5		57.0	10.7		9.0		56.8	51.3	B	9.5		43.5	20.1		7.9	9	3.8	8.2	K	8.8	22	14.2	16.0	
9.5	45	0.3	37.0		9.3	53	3.4	42.3		9.3		50.8	38.4		8.8		19.1	59.7	B	9.3		18.7	2.7	
9.5		4.9	2.2	B	9.2		5.3	36.7		8.5		51.0	53.3	K	9.3		27.5	13.3		7.3		55.9	33.6	B
9.5		12.9	6.7		8.7		6.2	32.9		9.1		53.7	44.0	aB	8.7		36.6	36.8	L	9.5	23	12.2	21.6	
9.5		19.7	33.1		9.5		15.1	13.7		9.5		55.5	30.4	a	9.5		43.8	43.3		9.0		40.0	2.1	
8.0		23.7	55.3	K	9.3		15.8	24.6		9.3		56.0	6.1		9.5		47.6	1.5		7.8		41.2	28.5	K
9.5		28.2	32.4		8.5		27.2	19.3		9.3	1	0.1	43.4	a	9.5	10	1.6	23.0		9.3		43.4	6.8	
9.5		45.8	23.7		8.6		27.9	2.6	K	9.5		0.3	48.1		9.0		7.8	49.6		9.5	24	10.4	30.2	
9.2		55.5	2.8	aB	8.7		42.5	44.8	L	8.5		3.7	53.1	K	9.5		31.4	3.3		5.8		34.8	13.4	K
9.5	46	6.1	9.8		9.5		53.0	22.8		9.0		13.3	28.7		9.5		42.3	54.1		9.2		35.8	4.0	
9.2		8.5	23.6	b	9.5		56.4	32.6	B	8.7		14.9	33.8		9.4		46.9	22.8	B	9.3		48.4	2.6	B
9.3		23.2	18.2		8.9		59.5	45.1	L	9.5		22.3	4.6		9.0	11	4.8	9.0		9.4		49.0	3.1	
9.0		27.6	45.4	B	8.9	54	4.9	6.8	K	9.5		31.0	44.5		9.0		8.6	36.8		8.4		49.4	1.6	L
9.5		28.5	44.8		9.3		12.9	3.7		7.8		34.2	29.4	K	8.8		9.0	11.2	L	9.1	25	12.1	13.6	aB
8.3	47	1.0	47.3	B	9.5		25.1	3.4		9.5		41.7	13.1		8.5		19.9	3.3	L	9.5	26	5.5	3.8	
9.0		3.7	56.2		9.5		26.1	27.0		9.0		49.6	57.9		8.5		35.6	14.5	L	8.8		8.2	18.2	B
9.3		11.7	54.5		9.5		38.7	22.3		8.1		57.6	8.9	K	9.5		45.8	8.2		9.5		23.7	55.0	a
8.3		25.1	13.5	K	9.0		44.0	8.5	K	9.5	2	5.0	30.0		6.5		48.9	59.4	Kb	9.0		31.9	56.3	
10pr.		+ 31.29	− 0.66		10pr.		+ 31.29	− 0.74		10pr.		+ 31.29	− 0.86		10pr.		+ 31.28	− 0.96		10pr.		+ 31.27	− 1.11	

1603ᵃ				
9.5	6	1.2	3.0	B

1701 — 1760

m	7h ′ ″	+2° ′	
9.5	26 47.3	4.4	
9.5	27 11.2	58.8	
8.0	12.7	44.9	L
9.5	20.3	7.9	
9.0	23.8	40.2	B
9.2	49.0	37.3	
9.0	58.7	51.1	K
8.5	59.5	12.0	K
9.4	28 0.7	0.4	B
9.4	1.5	38.5	
9.5	27.3	45.7	B
9.5	31.6	2.1	
8.8	42.2	34.9	K
9.5	55.4	46.5	B
9.3	55.7	23.4	
9.1	29 9.4	47.5	aB
8.7	12.2	16.5	
8.7	19.2	37.7	K
9.4	22.2	45.8	
7.5	30 10.2	14.8	K
9.3	19.8	29.3	
9.5	41.2	58.8	
9.2	46.0	54.2	
9.4	31 6.8	0.3	
9.4	8.2	6.1	
9.5	11.8	53.8	
9.0	31.2	30.7	K
9.5	48.8	4.5	
9.3	51.7	31.1	
9.5	32 7.3	40.0	
9.2	26.2	17.5	
9.2	28.2	37.3	
9.0	30.0	26.5	K
9.0	43.5	46.6	
9.2	48.2	19.9	
9.2	53.4	53.2	K
9.3	56.7	20.0	
8.8	33 9.7	58.0	K
9.5	11.1	6.2	
9.5	33.3	46.6	
9.5	42.1	1.5	
9.5	46.0	0.3	
9.2	52.7	8.2	b
9.5	55.7	38.0	
9.3	57.0	34.8	
9.3	34 4.7	17.8	
9.5	11.2	55.3	
9.3	31.7	53.3	
9.4	32.6	37.5	B
9.4	37.0	37.1	B
9.4	58 2	34.7	
9.1	35 6.2	28.9	aB
9.4	10.8	24.5	
9.5	12.2	45.6	B
9.5	16.5	41.2	
9.5	23.8	1.7	
9.1	31.1	6.0	
*9.0	39.9	12.5	B
9.4	36 14.0	10.3	
9.3	26.2	33.5	
	+	−	
10pr.	31.26	1.30	

1761 — 1820

m	7h ′ ″	+2° ′	
7.2	36 35.0	44.9	K
9.0	35.2	22.0	
9.4	45.3	57.1	B
9.5	59.9	57.0	B
8.8	37 25.5	58.5	K
9.5	28.2	29.4	B
9.5	31.2	35.0	
8.8	34.0	48.1	
9.3	43.8	0.2	
9.2	59.7	32.4	
9.2	38 13.9	8.0	
8.3	15.6	54.6	K
9.0	28.3	24.1	
9.0	39.8	6.2	
9.2	39 3.3	2.5	
7.4	4.8	12.6	K
9.1	12.1	10.6	aB
9.5	19.7	47.3	
9.5	24.2	23.1	
8.2	38.7	49.4	K
9.5	58.2	43.5	
9.4	40 7.2	14.1	
9.5	14.0	47.7	a
9.4	16.1	19.1	B
8.8	19.8	55.3	K
9.3	25.8	5.5	
9.5	34.5	53.6	
9.0	38.2	47.7	
9.0	44.2	13.4	
8.0	56.7	23.8	K
9.3	58.7	42.8	
9.4	41 10.6	22.0	B
9.0	12.7	17.2	
9.5	17.3	3.0	
9.3	34.7	19.6	
9.3	35.5	22.0	B
9.5	43.5	30.3	
9.5	42 30.0	50.7	
9.5	42.2	28.0	
9.4	44.0	49.7	
8.9	43 4.5	16.7	B
9.3	7.2	4.6	
9.1	9.0	9.9	aB
8.8	13.5	50.4	K
9.5	25.3	54.9	
9.3	40.7	32.5	
9.0	45.3	28.3	
5.7	44 12.4	7.8	K
9.3	31.5	20.6	B
9.4	38.1	24.1	B
8.8	45 9.3	54.9	
9.5	11.5	51.5	
9.5	17.7	14.5	
8.8	44.2	21.0	Kb
9.4	46.2	33.8	
9.5	46 15.8	56.0	
9.5	32.7	27.9	
8.5	37.2	46.0	
9.3	47 2.2	23.1	
9.5	13.8	13.3	
	+	−	
10pr.	31.25	1.42	

1821 — 1880

m	7h – 8h ′ ″	+2° ′	
9.5	47 17.8	56.0	
9.0	46.0	37.6	B
9.4	56.9	38.0	
9.4	48 1.3	44.0	
9.5	14.0	24.9	
9.5	55.2	6.1	
8.3	58.7	42.4	L
8.8	49 6.8	58.9	K
9.5	28.7	33.5	
9.5	35.1	20.2	B
8.7	45.2	55.1	K
9.5	46.7	46.0	
6.0	50 50.7	37.3	K
9.4	52.5	34.9	a
9.2	54.5	36.9	aB
9.5	51 2.1	8.5	
9.5	27.5	30.7	
9.2	28.5	59.7	
9.5	43.1	8.3	
9.5	46.8	5.1	
9.5	52 2.2	51.1	
9.0	5.6	59.9	
9.0	16.2	39.0	
9.3	30.2	27.2	
9.5	56.2	50.8	
9.5	53 1.2	22.4	
9.0	6.8	22.0	
9.5	25.2	13.4	
9.0	38.8	9.9	
9.5	39.2	46.6	
9.4	54 6.2	32.8	B
9.3	26.8	0.2	
9.5	32.2	58.7	
5.0	44.7	43.2	K
9.3	55 4.7	7.2	
9.0	15.3	21.9	K
8.8	34.1	19.5	K
9.5	56 0.7	26.0	B
8.5	5.3	10.5	Kb
9.5	7.4	30.8	
9.5	13.0	46.1	B
8 6	25.3	49.3	K
9.1	26.0	31.3	
9.5	57 8.7	27.4	
9.5	25.4	15.7	
9.0	27.9	52.5	K
9.0	57.8	34.8	K
7.7	58 15.7	35.1	K
9.3	30.7	42.4	
9.4	37.1	52.6	B
9.5	41.6	25.4	
8.5	59 6.7	20.9	K
9.5	16.7	48.2	
9.5	19.9	33.3	
9.5	29.5	12.0	B
9.4	40.2	12.2	B
9.5	49.3	26.1	
9.5	0 7.5	36.8	
9.5	18.9	36.8	
8.7	46.0	57.1	K
	+	−	
10pr.	31.24	1.59	

1881 — 1940

m	8h ′ ″	+2° ′	
9.3	1 5.9	30.7	
7.8	7.0	19.5	K
8.8	15.1	36.5	
9.4	29.6	50.0	
9.0	38.5	37.9	
9.2	39.1	56.9	aB
9.3	47.0	6.5	
9.4	53.3	51.3	
9.3	2 5.7	20.6	
9.0	23.6	29.6	
9.5	38.9	31.7	
8.8	54.8	20.9	
8.8	57.2	6.5	K
9.3	4 10.4	2.2	
9.3	16.0	3.6	
9.2	32.7	16.6	
8.2	40.7	43.1	K
9.3	43.1	35.5	
9.2	5 6.8	54.8	
9.5	14.6	22.6	
8.8	26.9	16.7	K
9.5	42.5	54.5	
9.0	6 2.8	14.0	
8.2	12.9	26.8	B
9.4	29.3	40.6	
9.5	41.9	2.4	
9.3	46.0	39.6	B
9.0	58.0	37.1	
9.5	7 2.5	8.5	
9.5	11.9	49.3	
9.5	13.7	33.7	
8.5	15.1	27.5	
9.0	20.7	36.2	
9.5	43.0	54.8	
8.5	53.4	33.0	
8.8	56.5	38.5	
8.7	8 0.9	28.8	L
9.0	9.5	43.8	
8.3	19.5	54.8	L
8.8	21.3	11.9	K
9.0	51.7	18.4	K
8.7	52.4	50.6	K
9.5	56.1	44.5	
9.5	9 10.1	58.0	
9.0	46.9	46.9	K
8.0	10 17.3	54.8	K
9.3	52.3	44.8	
9.5	57.5	31.5	
9.2	11 6.9	56.8	K
9.3	15.7	6.5	
9.1	28.6	35.1	b
8.3	28.8	58.2	K
9.3	32.7	29.7	B
8.5	56.0	3.3	
8.8	12 1.2	49.3	K
8.8	10.3	10.6	
9.3	12.1	16.5	
8.3	15.7	28.2	K
9.5	18.9	36.8	
9.0	49.4	48.7	
	+	−	
10pr.	31.22	1.76	

1941 — 2000

m	8h ′ ″	+2° ′	
9.5	12 56.4	53.7	
8.7	13 24.8	56.3	Kb
9.5	30.0	6.2	
9.3	50.7	55.4	
9.3	54.3	13.1	
9.2	14 17.2	56.2	B
8.5	35.3	54.5	K
7.5	40.4	36.2	Pb
8.5	45.1	10.2	
9.0	52.5	47.6	
8.5	15 19.1	20.5	K
9.5	34.9	2.6	
9.5	51.7	7.2	
9.0	16 4.5	39.3	
9.5	21.1	25.4	
9.5	30.5	41.7	
9.5	39.9	43.7	
8.8	58.7	14.2	
8.8	17 1.5	27.1	
9.4	13.0	1.3	B
9.0	38.5	52.4	K
9.0	43.5	33.7	
9.5	57.2	57.8	B
8.8	18 4.3	24.3	
6.5	5.2	35.8	K
9.3	16.2	15.4	B
7.5	19.0	1.9	K
9.5	35.4	15.1	B
9.5	45.5	36.8	
7.8	46.7	57.0	K
9.0	19 9.7	24.0	
8.8	12.3	53.1	
9.5	22.1	56.6	a
9.0	27.4	3.8	
9.0	32.1	1.5	
9.5	45.9	15.3	
9.5	52.1	21.6	B
8.7	59.9	54.9	
9.0	20 4.3	54.9	
9.4	23.8	3.4	B
9.5	49.0	55.8	
9.3	54.5	41.6	B
*9.5	21 21.3	46.9	
9.5	36.5	17.8	
9.0	51.0	1.6	B
8.8	22 35.9	17.5	
9.4	45.5	50.3	B
9.3	49.7	44.1	
8.8	56.5	26.7	
9.3	58.5	13.6	
8.8	23 2.7	35.0	Kb
9.0	3.2	21.9	
8.8	16.5	45.8	K
9.0	21.5	11.9	
9.0	24.3	38.2	
8.9	53.8	22.7	B
9.5	24 1.4	15.6	B
9.5	54.9	1.5	
8.5	25 9.9	39.3	Kb
9.3	29.6	57.9	a
	+	−	
10pr.	31.20	1.91	

1758a				
9.6	36	12.3	45.6	B

1962a				
9.7	20	55.7	45.5	B

5ᵐ — 10ᵐ +2°

2001 — 2060					2061 — 2120					2181 — 2180					2181 — 2240					2241 — 2300				
	8ᵐ		+2°			8ᵐ		+2°			8ᵐ—9ᵐ		+2°			9ᵐ		+2°			9ᵐ—10ᵐ		+2°	
m		″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	26	6.9	23.5	B	9.5	38	37.4	16.0	B	9.5	52	34.8	56.3		9.2	13	17.0	1.3		8.0	35	13.5	27.3	K
8.8		8.3	4.8	K	9.0		50.7	9.4	B	9.0		54.0	16.3		9.3		21.6	2.8		9.3	36	22.0	44.0	
9.5		10.3	50.7		9.5	39	14.2	56.0		9.4	53	14.0	30.5		9.4		49.7	51.8		8.0		53.4	37.9	K
9.5		11.4	15.6	B	9.3		26.8	18.2		9.4		40.6	29.6		9.3	14	20.0	2.5		9.0	37	34.4	32.3	K
9.5		20.9	36.2		9.4		55.0	2.3	B	9.0	54	9.2	35.8		8.3		23.7	29.9	K	8.9		48.1	57.8	K
7.8		24.0	5.1	K	9.5	40	4.2	8.3		8.8		17.0	46.3	K	9.4		35.8	39.3	B	5.6	38	54.5	27.1	K
9.5		32.7	15.6		9.3		4.4	38.2		9.5		23.0	48.7		8.8		42.0	6.1		8.0	39	4.2	23.1	K
8.8		43.7	36.8		9.4		55.8	14.7		9.4		24.5	8.8		8.4		59.0	29.2	Kb	8.5		21.4	58.5	K
9.0		48.0	40.3		9.5	41	32.7	7.2	B	9.5		48.2	15.7		9.0		59.7	37.9		8.2		51.6	58.9	K
8.5	27	0.2	8.8		9.5		57.0	2.0		9.0	55	22.9	2.3	B	9.0	15	0.6	20.5		9.5	40	5.2	45.2	
9.0		4.4	42.0		9.3	42	5.1	52.9	B	9.4		34.7	56.9		9.4		3.5	54.0	B	9.5	41	13.0	40.0	
9.4		14.0	37.2		7.5		7.3	0.7	K	8.3		36.0	38.2	K	9.5		20.6	52.7		9.2	42	14.0	29.2	K
9.3		19.4	41.5	aB	7.5		21.7	54.1	L	9.0		36.5	14.2	K	9.2		51.7	49.7		8.5		32.6	27.5	K
9.5		32.5	55.8		9.2		54.5	57.4	a	9.5	56	12.8	43.5		9.3	16	11.0	36.5		9.4		58.7	41.2	
8.8		40.4	10.0		9.5	43	13.2	31.7		9.4		19.6	24.0		7.8		25.8	3.0	K	8.2	43	0.5	29.7	K
8.8		59.5	55.2		9.3		23.0	4.9		7.9	57	8.8	29.0	B	8.8		59.7	36.2		9.3		36.7	27.8	
9.3	28	10.7	58.3		9.5		26.4	1.4		9.0		41.1	0.0		8.2	17	23.3	8.1	Kb	9.4		49.1	4.1	
8.5		18.5	29.5	K	8.5		52.8	46.2	K	7.2		43.8	59.2	K	8.8	18	20.3	33.0		9.4	44	7.3	20.0	
8.0		34.1	33.3	K	8.5	44	12.8	3.3	K	9.5	58	9.6	15.0		9.3		25.7	17.0		9.4		14.9	6.8	
9.5		40.0	51.4		9.0		14.8	44.2		9.0		14.2	14.6		9.2		33.6	58.5		9.3		30.9	8.2	B
9.5		41.9	53.1		9.3	45	0.6	45.2		9.5		37.6	20.5		8.3		36.5	18.8	K	9.4		41.3	47.6	
9.5		58.1	45.2		9.0		38.3	9.3		8.8		42.8	30.3	K	9.0	19	34.3	16.7		8.8		54.3	59.1	
8.5	29	2.2	2.9		9.2		56.3	56.1		9.0		44.2	38.9		9.3		39.7	47.7		9.5	45	24.4	29.2	
8.8		3.7	15.7		8.5	46	2.0	27.2	K	9.3		50.0	10.4		9.3	20	27.0	26.5		9.3		56.1	44.0	
9.3		19.9	8.8		9.4		10.6	59.0	B	6.8	59	31.5	2.6	K	9.5	21	6.3	8.3		9.3	46	42.1	28.2	
9.5		50.1	21.2		9.3		19.8	59.2	B	8.8	0	33.0	52.8	K	9.3		32.0	41.4		9.2		57.7	35.8	b
9.2	30	8.7	36.8		9.3		20.0	38.2		9.5	1	6.0	35.4		9.3		33.0	0.0	a	9.3	47	22.2	34.2	
8.3		17.4	9.8	K	7.8		21.0	22.3	Kb	9.5		11.3	2.8		9.3		42.0	29.2		9.4	49	19.4	2.5	
9.1		46.1	55.5	K	9.5		29.2	46.1	B	8.8		35.0	48.6	Kb	9.1		54.0	24.7	b	9.2		34.3	27.0	
9.5	31	0.6	21.1		9.3		29.8	13.4	B	9.5	2	37.3	47.9		9.5	22	0.5	31.4		9.0		44.6	29.9	K
9.0		11.4	6.5	K	9.4		33.4	15.4		9.4		42.7	4.5		8.8		19.6	57.6		8.4		55.7	48.2	L
9.5		22.0	0.3		9.4		48.5	43.6	B	8.8	3	7.0	23.2		8.0		21.0	49.7	K	8.5	50	8.9	19.7	K
9.5		23.2	50.9		8.7		51.2	12.4	K	8.8		15.4	7.2		9.2		24.8	4.4		8.8	52	1.4	42.8	
8.3		33.6	38.1	K	9.2		56.3	19.7		9.5		17.7	24.0		7.8	23	52.9	55.1	K	9.5		34.5	33.1	
9.5		41.4	6.2		8.0		57.8	38.2	L	9.4		53.3	2.1		7.2	24	2.4	5.6	K	9.4	53	4.2	7.2	
9.3		50.8	17.7		8.2	47	23.8	34.1	L	9.2	4	10.9	56.9	b	9.5		38.7	15.0		8.7	54	13.0	58.9	K
9.0	32	16.4	45.4		8.7		30.2	1.2	K	9.0		20.7	17.4		6.2	25	13.0	31.0	K	9.4		21.0	11.5	
9.5		17.6	57.5		9.5		37.4	6.9		8.9	5	1.0	31.3		9.4		14.1	25.4	B	9.0		38.8	33.8	
7.2		46.8	26.3	K	9.3	48	30.4	50.0		9.1		8.6	53.9		9.5		26.5	43.5		8.4	55	2.0	30.9	K
9.5		59.6	19.8		8.7		40.6	43.9	K	9.0		41.0	32.7		9.5	27	7.0	19.5		9.2		17.0	27.5	K
9.5	33	30.7	23.2		9.0		50.8	41.1	K	9.0		42.5	54.0		9.3		17.1	14.7	B	8.6		25.8	10.6	K
9.3		42.8	21.8		9.0	49	0.4	56.6		9.5		46.7	18.8		9.5		18.5	19.5		8.8		52.0	45.7	K
8.5	34	15.7	3.2	K	9.2		8.5	4.0		9.3	6	19.3	14.6		9.3	28	22.0	19.0		9.3	56	10.7	2.2	B
9.3		17.4	51.9		9.5		31.0	48.7		8.8		27.0	50.4	K	9.3		47.4	7.1		9.1		12.3	47.9	K
9.5		17.5	59.2		9.5		36.0	36.2		9.0		42.4	4.9		9.5	29	28.0	55.5		9.4		17.7	7.2	B
9.3		28.8	21.5		9.3		49.3	4.2		9.3		46.3	13.6		9.5		32.0	3.1	B	9.5		32.8	23.7	
9.5		47.6	51.6		9.5	50	4.5	55.7		4.3		50.6	55.7	K	8.0		56.9	32.2	K	9.5	57	54.9	41.4	
9.5		47.8	30.9		9.5		15.5	2.8		7.5	7	38.8	40.4	K	9.5	30	9.0	27.3		8.8	58	54.9	44.1	Kb
9.3		58.3	24.6		9.0		16.4	20.6	K	9.1		45.7	18.1		7.2		14.5	20.7	K	9.5	59	45.0	48.8	
9.3	35	3.3	46.1		9.5		32.2	27.8		8.5		56.3	11.9	K	8.2		49.5	29.4	K	9.0	0	14.2	35.6	
9.5		33.3	42.0		9.1		34.7	12.8	aB	8.8	8	11.0	46.6	K	9.5	31	28.0	50.4	B	9.3		36.0	21.1	
9.5		38.2	54.4		7.5		40.0	6.0	K	8.5		35.6	18.8	K	9.0		58.0	13.7		9.5	1	54.8	0.6	B
9.5		54.2	31.3		9.2		47.6	55.5		7.5	9	43.0	33.0	K	9.1	32	48.5	19.0	a b	9.0		56.1	38.8	
8.9	36	21.4	53.2		8.5		48.2	37.5		8.3	10	10.0	13.6	K	9.5		54.0	13.6		9.3	2	39.0	10.0	b
9.2		25.3	57.2	aB	9.5	51	7.2	18.5		9.3	11	6.3	29.2		9.5	33	38.5	50.3		9.3		52.5	3.2	
9.5		54.0	23.2		9.5		30.8	25.0		9.5		16.0	8.7		9 5	34	29.5	55.8		9.3		55.8	59.1	B
8.2	37	19.4	13.6	K	9.5		47.0	22.2		9.5		20.7	37.9		8.7		31.7	44.0	K	8.7	3	11.4	39.8	K
9.1		24.6	21.5		9.2	52	7.2	20.5		9.5		50.0	20.6		9.5		43.0	25.5		9.5		16.7	29.4	
9.5	38	18.8	20.2		9.0		7.8	56.4	Kb	9.5	12	38.5	2.8		8.0		48.4	58.2	K	9.5		22.2	1.8	
9.1		38.0	22.6	b	9.5		19.0	17.7		9.5	13	4.9	59.9		9.3		58.0	47.9		9.0	4	6.8	56.0	
10pr.		+ 31.18	− 2.05		10pr.		+ 31.16	− 2.22		10pr.		+ 31.12	− 2.39		10pr.		+ 31.09	− 2.58		10pr.		+ 31.03	− 2.81	

2290a

9.5	0	32.0	37.3

2301—2360

	10ᵘ		+2°	
m	′	″	′	
*9.5	4	35.9	26.8	
*9.5	5	0.3	9.7	B
*9.3		9.9	55.5	
9.3		20.5	54.0	B
9.0		21.6	41.4	R
9.3	6	23.1	20.2	
*8.9		56.7	10.5	K*b*
*9.5	7	24.2	21.3	
*9.0		28.4	37.1	K
*8.0	9	23.7	31.5	K*b*
8.0	11	2.7	17.1	K
9.3		26.8	33.7	B
8.3		44.0	15.0	K
8.9	12	42.0	10.9	K
9.4		50.6	54.1	B
9.0	13	24.6	38.3	
9.5	14	16.1	54.0	
8.6		57.3	11.2	K
8.2	15	56 6	58.6	K
8.4	17	29.4	3.3	K
8.3	19	47.4	15.2	K
9.5	21	57.0	23.2	
7.5	22	17.5	14.6	K
8.9		23.1	6.2	K
7.5	23	2.2	54.2	K
9.4		25.0	57.7	
9.5	25	15.3	8.7	
9.3		21.9	47.9	B*b*
9.3		47.0	24.1	
9.0	26	28.3	5.0	
9.0		30.4	11.6	K
9.5	27	1.0	43.1	
7.8		6.9	31.7	K
7.0		39.0	57.1	K
9.5		50.5	53.6	
9.5	28	17.0	29.5	
8.8		49.8	28.9	K
9.5	29	3.5	41.1	
9.1		14.9	50.3	K
9.5		52.6	45.6	
9.2	30	7.6	37.3	*a*B
8.9		34.5	14.8	
8.1		50.4	0.1	K
9.3	31	49.8	43.8	
9.3	32	10.9	24.0	*b*
8.5		31.5	2.4	K
9.3	33	30.4	22.7	
9.5		31.9	59.1	
9.3		39.8	43.8	
8.4	35	48.7	57.1	K
8.5		56.5	41.3	K
8.5		59.7	55.8	K
8.3	37	19.3	36.2	K
9.3		22.6	18.3	
9.5		51.1	53.4	
9.5	38	33.7	52.3	
8.9		51.3	53.8	K
9.0	41	4.5	5.3	
8.7		21.7	9.7	K
8.8		43.8	55.8	K

	+	−
10*pr.*	*30.95*	*3.01*

2361—2420

	10ᵘ—11ᵘ		+2°	
m	′	″	′	
9.5	43	36.3	15.5	
9.0		44.0	8.9	
8.9		52.1	46.7	K
9.0	44	16.5	16.4	
9.1		44.2	8.7	K
8.9	45	17.3	31.2	
8.0		18.4	52.4	K
8.9		18.6	6.4	K
9.5	47	44.9	25.7	
9.5	48	46.8	51.8	*b*
9.2	49	20.5	18.3	K
9.5		58.2	34.3	
8.0	51	20.6	30.3	K
8.8		31.0	58.7	K
9.5	53	8.2	49.1	
9.3		54.3	5.0	
9.3	54	21.9	56.1	
8.2		50.6	58.9	K
8.6	55	19.2	1.9	K
8.9	56	32.6	37.0	
9.5		37.7	34.1	
9.5	57	54.6	38.5	B
9.2		55.9	1.2	
9.5	58	0.6	13.5	B
9.2		35.2	28.7	
8.2	59	8.4	40.9	K
6.0		31.2	45.1	K
9.1	0	3.6	2.0	*b*
9.5		35.0	50.2	
9.5	1	2.5	19.6	
8.7		32.1	23.1	
9.3	2	16.1	22.1	
9.3	3	14.3	5.9	*b*
9.5		19.1	25.3	
9.5		25.3	53.2	
9.5		32.0	18.0	
9.5		33.5	4.7	
9.0	4	4.0	51.1	K
9.5		33.3	47.9	
9.1	5	20.8	19.4	*b*
9.3		49.0	49.2	
9.5	6	28.1	25.2	
8.5	7	50.6	51.5	B
9.1		50.9	59.0	
9.5		54.0	52.1	K
8.8	8	25.2	52.0	K
9.5		36.3	15.7	
8.8		41.0	21.8	K
5.5	9	49.3	48.7	K
9.3	11	21.7	43.9	
6.5		28.6	27.5	K
9.0		39.5	28.4	K*b*
8.8	12	48.0	27.0	
9.5	13	22.7	31.9	
9.5	14	57.1	4.8	
9.3	15	17.4	49.0	*b*
9.3		41.6	59.6	
6.0	16	35.8	12.0	K
9.3		43.3	38.7	
9.0		58.7	43.2	K

	+	−
10*pr.*	*30.87*	*3.23*

2421—2480

	11ᵘ		+2°	
m	′	″	′	
8.0	17	18.3	53.4	B
8.7		24.3	2.5	K
9.3	18	6.2	45.7	B
8.7		22.4	40.9	K
9.5		26.0	58.3	
9.5		41.0	13.1	
9.5		48.0	30.4	
9.5	19	28.3	4.8	
9.5		34.5	18.0	
9.5		53.0	14.6	
7.8		56.3	10.1	K
7.8	20	6.3	6.1	K
9.1		16.7	54.7	*b*
9.2		23.9	39.8	
8.6		28.1	17.1	
9.4	21	12.8	56.9	
8.7		14.3	41.0	
9.3	23	45.3	22.0	
9.3	24	54.4	50.7	*b*
8.4	25	10.9	8.7	K
8.6		36.3	5.4	K
9.3		45.7	18.5	
9.5	26	2.3	36.6	
9.3		5.0	7.9	
9.3		12.7	55.8	*b*
9.5		21.1	34.5	
9.5		56.4	42.3	
9.5		57.3	33.6	
9.0	27	18.4	18.3	
9.2	28	15.8	0.5	*b*
9.5	29	16.2	42.7	
9.0		54.1	45.0	K
8.9	30	15.8	59.4	
8.8		42.0	44.8	K
9.5	31	19.6	55.9	
9.5		58.0	12.3	
8.8		58.3	21.0	
8.9	32	2.3	30.6	B
9.5		32.0	18.7	
9.2		45.9	46.2	
8.3		55.7	25.0	K
9.2	33	16.9	21.8	
9.3		31.3	12.4	
9.5		54.3	22.7	
9.2	34	10.6	44.2	*b*
9.0		38.3	3.3	
9.5		50.3	0.4	
9.5	35	31.0	35.4	
8.8		31.3	51.3	
9.5	36	2.8	22.7	
9.3		5.4	44.4	
9.3		27.5	35.9	
9.4		44.1	51.7	B
8.0	37	39.1	23.2	K
9.5	38	13.0	54.1	
9.3		42.2	30.7	
8.8		47.7	20.4	K
9.5		53.0	28.4	
9.2	39	27.9	25.4	
9.0		42.6	19.6	

	+	−
10*pr.*	*30.80*	*3.31*

2481—2540

	11ᵘ—12ᵘ		+2°	
m	′	″	′	
8.4	39	59.0	50.0	K
9.3	40	27.5	36.4	B
9.1		30.1	50.3	
9.5		44.0	25.7	
9.5		52.0	15.8	
9.3	42	21.7	23.4	
9.5		23.0	14.6	
9.3		58.2	55.7	
3.3	43	9.0	35.6	K
9.2		45.8	34.9	
9.3	45	45.9	55.9	
8.7	47	16.2	19.9	
8.5		38.1	7.1	K
9.5		54.4	56.1	
9.5	48	15.4	6.7	
9.5	50	50.6	49.8	
9.5		57.1	13.8	
9.3	51	38.4	25.8	
7.5		59.9	37.7	K
9.5	52	29.3	47.0	
8.9		32.9	1.6	K
9.3	53	10.6	7.4	
9.5		24.0	55.2	
9.4		33.6	2.2	
8.8		35.2	42.2	K
9.5	54	58.1	8.4	
9.3	55	9.0	26.9	*b*
9.4		43.3	46.6	
7.7	56	48.5	16.6	K
9.3	57	6.5	47.5	
9.2		*50.0*	32.4	*b*
8.3		46.4	58.9	K
8.6	58	25.2	7.0	*R*
9.5	59	42.0	28.0	
9.0	0	8.0	13.6	*R*
9.0		17.4	24.9	
6.4	2	16.6	43.9	K
9.4		35.1	0.6	
9.4	3	33.4	12.4	
9.5	5	31.4	6.1	*R*
9.3	6	2.2	17.7	
9.0		14.2	43.9	
8.7	7	58.2	19.0	
9.3	8	40.2	45.6	B
8.5	9	43.6	32.2	K*b*
8.0	10	33.2	23.9	K
8.8		43.7	16.9	K
9.5		48.4	46.2	
9.5	11	5.6	59.4	B
9.5	12	5.6	45.6	
9.3	13	7.3	20.3	
9.3		32.7	58.0	B
9.0	14	26.0	44.5	
8.5	16	13.2	20.9	K
9.0		22.8	29.0	
7.8	17	16.7	11.2	K
9.1		28.0	4.9	
8.8	18	10.7	7.0	
7.7		38.4	51.4	K
9.0	19	2.0	38.0	

	+	−
10*pr.*	*30.71*	*3.34*

2541—2600

	12ᵘ		+2°	
m	′	″	′	
9.3	19	30.7	23.5	
8.8	20	16.6	38.6	K
9.5		25.5	41.4	
8.8		31.0	16.1	
9.3	21	12.2	26.5	K
9.5		19.1	27.5	
9.3		55.0	49.4	
9.5		55.9	8.8	
9.3	22	53.5	5.2	
8.8	23	38.0	54.3	K
9.1		47.0	9.0	K
7.9		50.0	8.5	K
9.5	26	6.5	41.0	
9.0		54.5	15.3	*R*
9.5	28	34.2	24.5	
9.5		39.0	33.7	
9.3	29	40.1	10.4	*b*
9.3	30	4.0	28.1	
8.8		47.8	47.9	K
6.0		58.8	39.6	K
9.5	31	8.1	0.1	B
9.5		48.3	42.7	
9.5	32	25.2	39.4	
9.2		46.4	34.6	
9.4		49.0	36.9	
9.0	33	17.4	6.4	K
9.2	34	7.8	48.3	K*b*
9.0		57.8	26.4	K
8.3	35	3.5	8.5	K
9.5		10.2	26.0	*a*
9.5	36	11.3	36.6	
8.7		12.8	57.9	K
9.5	37	16.7	11.2	
9.2		38.8	44.8	*b*
9.5		57.8	16.3	
9.4	38	19.3	10.6	B
9.4		22.7	15.3	B
9.0	39	41.8	16.2	K
9.0	40	16.7	29.5	K
8.5		47.8	35.1	K
9.5	41	15.1	10.6	
8.5	42	9.5	17.1	L
9.3		12.8	12.9	
9.2		14.3	1.3	
8.2		21.3	0.6	L*b*
9.5		33.8	54.2	
9.5	43	4.6	12.6	
9.5		33.5	34.5	
9.2		42.2	40.4	K*b*
9.0		55.7	14.3	
9.2	44	20.6	59.7	K
9.5	45	2.3	4.6	
8.0		9.5	44.8	K
8.7		27.2	53.9	K
9.1		54.5	26.4	
8.8	46	22.1	34.4	K
9.5	47	26.9	13.4	
9.5		31.3	37.4	B
8.8		45.2	16.7	
9.0	48	16.6	50.9	K

	+	−
10*pr.*	*30.58*	*3.30*

2301 a
9.5 | *4* *42.0* | *19.2* |

2302 a
9.5 | *5* *5.5* | *36.9* |

2307 a
9.5 | *7* *5.0* | *19.9* |

2309 a
9.5 | *7* *35.0* | *16.1* |

2520 a
9.4 | *5* *44.9* | *10.1* |

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	12ᵐ—13ᵐ		+2°			13ᵐ		+2°			13ᵐ—14ᵐ		+2°			14ᵐ		+2°			14ᵐ		+2°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	49	41.7	8.5		9.5	13	55.6	7.3		8.7	39	58.1	56.3	K	8.6	3	51.1	52.7		9.5	29	32.9	28.1	
9.5	50	1.0	46.2		9.0	14	1.2	20.2		9.5	40	5.9	16.8		8.3		56.5	16.6	K	9.4	30	4.1	3.7	
9.5		4.0	18.9		9.5		10.4	32.5		9.2		8.8	51.7	K*b*	6.6	4	10.0	2.9	K	9.4		4.2	34.5	
7.7		5.0	12.6	K	5.8		19.9	51.1	K	8.7		9.4	58.2	K	9.3		36.1	42.5		6.9		9.8	54.5	K
9.5		46.1	32.7		9.0		26.9	8.8	K	9.3		23.4	3.2		9.5		46.2	1.3		9.5		54.5	45.2	
9.3		49.6	59.9	K*b*	9.5		46.9	24.5		9.2		33.8	14.0		9.1	5	14.9	16.1	*b*	8.6		56.5	39.7	L
9.5	51	46.1	30.2		9.5	15	16.9	1.5		8.3	41	11.9	21.0	K	8.9		35.1	51.1	K	9.3	31	0.3	40.2	*n B*
9.0		53.5	47.9	K	9.3		49.8	24.9		9.5		21.4	43.9		9.5	6	39.9	23.4		9.3		36.6	46.1	
9.5	52	11.0	13.9		9.3		59.0	9.2		9.5		42.7	17.2		9.2		43.9	53.5	*a*	9.3	32	3.7	8.4	
9.5		19.5	28.5		9.5	16	44.9	30.0		9.5	42	3.6	32.8		9.1	7	3.9	28.2		9.1	33	17.2	36.1	*B b*
9.5		26.0	3.0	B	7.1		56.1	9.4	K*b*	9.3		5.8	3.6		9.1		5.8	41.0		9.3		54.3	37.1	
8.8		36.2	0.2		9.5	17	25.4	58.9		9.5	43	56.9	48.4		9.0		10.2	54.8		9.5	34	14.6	28.3	
8.5	53	4.4	2.1	L	9.2	18	2.4	51.6	K	9.5	44	8.2	22.0		8.9		14.5	19.5	K	8.0		36.3	15.2	L
8.0	54	7.0	17.8	K*b*	9.0		2.9	23.1	K	9.5		22.4	20.6		8.7		17.3	29.4	K	8.1	35	12.4	54.5	K
9.0	55	26.5	52.1	K*b*	9.5		13.4	41.8		9.5	45	27.7	45.3		8.5		38.2	34.9	*K*	7.7		52.9	26.7	K
9.3	56	30.0	59.9		9.0	19	11.6	28.7	K	8.8		39.4	13.0	L	9.2	8	10.8	41.1		9.5	36	16.8	57.2	
9.2		47.5	52.2	K	9.5		13.4	58.2		9.2		58.4	48.8		9.5	9	5.3	24.8		9.5		43.6	59.0	
9.0		49.5	44.1		9.5	20	14.9	13.3		9.1	46	3.4	38.7	K*b*	9.5		5.8	43.6		8.5	37	25.6	38.6	K
9.5	57	50.0	25.8		9.5		47.1	23.4		9.3		43.7	1.3		9.2		44.7	2.0	K	8.8		46.2	41.6	*B*
9.3	58	5.9	52.1	K	7.7		54.5	59.0	K	8.9	47	9.1	41.5	K	9.4	10	56.1	58.6		9.5		55.0	47.0	
9.5		8.5	34.5		8.8	21	44.4	55.7	K	9.5		19.4	42.9	B	9.5	12	10.3	43.7		8.9		57.8	12.2	
9.5	59	22.3	18.3		9.3		58.2	55.7	K	9.4		36.0	57.9		8.5		12.1	18.3	K	4.0	38	56.2	29.6	K
9.5		33.8	59.7		9.5	22	0.2	59.1		9.5		50.1	12.0		8.3		50.6	36.8	K	8.9	39	50.4	12.7	K
9.5		46.1	39.4		9.3		1.9	20.6	K	9.5	48	0.9	40.0		9.3	14	27.5	25.2	*B*	9.2	40	4.1	49.2	K
9.0	0	9.0	55.9	K	8.7		11.4	27.2	K	8.0		25.9	14.7	K	9.5	15	4.7	24.1		7.7		6.3	39.8	K
7.7		13.3	14.7	L	9.2		51.3	9.6	K	9.5		42.2	2.9		7.8		22.4	56.3	K*b*	9.0		25.2	26.5	K
9.5		26.2	3.0		9.5	24	24.4	16.1		9.5		47.2	32.5		8.7		24.1	20.2		9.5		28.3	14.1	
9.5		28.4	41.5		9.2		35.5	27.6	K	9.5		50.1	20.6		9.4		56.5	53.5		9.5	41	35.3	45.9	
9.1		30.9	6.6		8.8	25	19.4	48.8	K	7.9	49	8.9	57.0	K	9.5	16	0.3	6.9		8.1	42	17.8	6.3	K*b*
9.5	1	14.4	33.1		9.3		22.6	51.2	K	9.3		34.1	0.9		9.3		0.8	16.4		9.0		27.3	50.0	K
9.0		25.5	58.8	K	9.5	26	26.7	28.6		9.5		38.5	54.0		9.0		27.5	18.6	*B*	9.1		32.8	39.0	*B*
8.3		36.9	56.1	K	9.2		32.9	36.2	*b*	8.5	50	58.1	55.8	K	9.0		30.7	23.5		9.5		50.5	12.7	
9.5		37.9	27.5		9.3	27	30.2	0.8		9.5	51	36.6	4.3		8.5	17	6.1	36.4		9.1	43	8.8	36.1	K
9.5		39.0	22.0		9.5		48.9	27.9		9.3		43.9	54.2	K	9.2	18	1.4	12.3	K	9.5		45.3	9.9	
9.5	2	0.9	54.0		9.5	28	19.4	37.0		9.5	52	45.4	13.3		9.2		3.0	25.5	K	8.9	44	3.3	39.0	K
9.4	3	11.4	39.1	K	8.8	29	25.9	37.6	K	9.5	53	16.7	54.0		9.5		33.5	8.7		8.2		33.7	37.1	K
8.2		28.2	29.7	K	9.5		32.9	55.3		9.5		30.4	32.1		9.5		49.6	10.5		9.5		48.6	20.5	
9.5		57.4	54.7		9.3		51.1	3.9		9.5		45.6	48.4		9.3		54.8	31.7	K	9.5	45	9.2	22.0	
9.5	4	25.4	25.9		9.3	30	52.4	33.8		8.7		45.7	2.3	K	8.8	19	12.8	41.0	K	9.5		38.3	32.4	
9.5		46.4	13.5		9.2	31	2.7	59.5	K	9.2	54	10.5	15.3	K	9.5		16.4	46.7		9.4		57.2	59.2	
9.5	5	0.9	26.2		9.3		2.9	17.9	K	4.2		17.0	15.0	K	7.7		40.0	23.0	K	7.5	46	21.2	50.2	K*b*
9.2		26.1	54.7	K	8.6		10.4	12.6	K	9.0		17.8	59.2		9.5	20	24.9	34.7		8.8		25.7	22.1	
9.5		38.4	22.0		9.3		41.4	32.8		8.5		23.2	26.7	L	9.5	21	13.0	22.9		9.1		45.6	59.4	K
9.5	6	19.6	24.5		9.5	32	26.9	24.5		9.0		39.5	15.6	K	9.5		21.8	48.3		8.3		46.1	44 6	K
9.2		31.4	31.4	*b*	8.3	33	4.4	54.0	K	8.7		54.5	23.7	K	9.5		26.4	53.9		9.5	47	17.1	36.5	
7.0		34.9	13.3	K	9.5		20.9	37.7		9.2		55.3	50.3	K	8.0		31.0	16.7	K	9.0		39.6	36.0	*B*
9.3	7	54.4	26.8		8.8		27.4	51.2	K	9.3	56	55.5	23.6	*b*	9.5		33.9	2.7		9.0	48	6.2	35.5	
9.5	8	9.9	48.4		9.0		40.7	48.4	K	6.7	57	16.7	59.6	K	8.9		38.0	5 7	K	9.5		23.0	16.7	
9.4		32.6	24.5	B	9.5	34	14.5	1.5		8.5		38.9	39.2	K	9.5		42.2	29.2		9.4		29.5	42.4	
9.5		35.5	27.8	B	8.5		47.3	54.5	K	8.8	58	35.0	45.6		9.5	22	5.2	22.5		9.5	49	0.0	35.0	
9.5	9	3.4	52.9		9.5		57.6	14.3		8.5		43.5	12.8	K	9.2		15.3	35.2	*a b*	9.4		42.5	33.8	
8.9		10.9	13.3	K	9.5		57.6	58.9		9.0	59	21.8	37.0	K	9.5	23	7.0	0.0		9.5		43.2	8.2	
7.5		29.5	0.1	K	9.1	35	57.4	14.0	K	9.0	0	18.9	32.5		8.6		54.1	9.2	K	9.5	50	2.7	15.1	
8.8		31.4	57.4	K	9.3	36	11.9	47.4	K	8.9		28.1	8.0		8.7	24	23.0	28.1	K	8.8		46.2	14.7	*B*
9.5	10	10.4	49.1		9.0		20.4	42.2		9.3		40.7	13.2		9.2	25	37.8	56.2	K	9.3	51	13.2	47.6	K*b*
9.5		32.7	47.4	K	9.2		37.1	52.6	K	9.5	2	6.5	53.2		8.5	26	58.5	19.0	K	9.5		31.6	5.9	
9.3		41.0	2.7		9.5		42.4	6.2		9.5		41.3	57.7	K	8.4	28	25.9	53.4	K	9.5		51.3	14.0	
8.0	11	6.0	0.6	*B*	8.6	37	41.2	14.4	K	9.4	3	9.8	23.5		9.1		40.9	30.1	*b*	9.5	52	20.7	34.0	
9.2	12	15.9	1.1	K	9.5	38	20.2	9.5		9.5		16.9	53.8		9.3		51.1	20.8		8.8		38.1	12.7	K
8.4		39.9	22.7	K*b*	9.5	39	31.9	38.0		9.2		44.4	45.4	K	9.5	29	25.4	31.6		8.5	53	51.4	25.7	*B*
		+	—				+	—				+	—				+	—				+	—	
10pr:		*30.57*	*3.23*		*10pr:*		*30.50*	*3.11*		*10pr:*		*30.45*	*2.96*		*10pr:*		*30.40*	*2.77*		*10pr:*		*30.34*	*2.53*	

2901 — 2960 (14ᵐ–15ᵐ, +2°)

m				
9.5	54	28.3	29.0	
9.5		30.3	33.7	
9.5		59.6	13.1	
9.0	55	30.5	11.2	B
4.7		35.2	40.0	Lb
9.5		42.4	37.0	
9.2		58.4	56.8	K
8.9	56	21.6	56.7	K
9.3		42.8	40.9	K
9.5		48.3	8.6	
8.5	57	58.3	35.0	Kb
9.5	58	50.7	58.0	
9.3		53.8	52.4	K
9.4	59	7.8	17.3	B
7.1		48.5	55.3	K
9.3	0	53.8	33.0	B
9.5	1	0.3	51.0	
9.2		1.3	11.1	K
7.9		35.8	14.2	K
9.5		47.3	50.0	
9.2	3	36.1	24.9	K
9.4		46.3	14.2	
9.2	4	30.3	47.2	B
9.3		36.3	15.6	
8.8		52.6	56.5	K
9.5	5	19.3	38.4	
9.5		45.3	47.8	
8.8		47.8	26.0	K
9.5		56.2	47.4	
9.2	6	3.3	15.6	K
8.9		15.0	47.7	
9.5		45.8	21.5	
8.8		46.8	15.6	K
9.5	7	16.3	29.2	
9.5		20.3	34.4	
9.5		29.8	43.8	
*9.5	8	5.2	56.5	
9.6		9.3	47.9	
9.5		37.4	34.5	R
9.3		42.2	42.7	Rb
9.5	9	5.7	58.0	
*9.5	11	7.3	17.7	
neb		14.8	36.9	
5.0		57.2	18.7	L
9.5	12	44.3	50.0	
9.5	13	13.3	37.9	R
9.5	14	0.3	27.3	
9.5		19.8	28.7	R
9.5		36.8	20.0	
9.5		41.8	36.5	
9.5		57.3	31.2	R
8.6	15	26.3	43.7	L
9.5	16	23.3	7.1	
8.8		24.3	32.5	
9.2		49.2	51.2	K
9.2	17	18.8	49.3	K
8.6		40.5	0.7	K
9.0		46.3	15.6	Kb
9.5	18	3.0	52.3	
9.5		26.2	56.3	R

	+	−
10 pr.	30.30	2.30

2961 — 3020 (15ᵐ, +2°)

m				
9.5	19	6.8	1.7	R
9.0		31.3	23.6	
9.3		38.8	11.1	
8.6	21	14.0	59.9	K
6.3		20.2	20.3	Kb
9.2		56.3	29.8	
8.7	22	5.9	20.2	K
8.6		16.9	15.8	K
9.5		45.3	30.9	
9.5		50.7	9.3	
9.5		52.0	49.3	
9.5	23	43.3	10.3	R
9.3	24	13.3	21.5	K
9.5		30.7	49.8	
9.3	26	30.7	57.9	K
9.3	27	45.7	22.0	K
7.1		46.6	9.1	K
9.4		49.5	3.8	K
9.5		53.8	4.1	
9.5	28	16.3	37.2	
9.5	29	15.9	43.1	
9.5	30	27.1	3.9	
9.5	31	25.3	43.0	
9.5	32	23.4	39.4	
9.1	34	39.8	23.0	Rb
9.5	36	13.5	24.8	
7.7		28.5	53.4	K
9.0		40.0	55.7	K
6.1		45.0	59.1	K
9.5	37	5.8	34.2	
9.5		14.3	58.7	
9.2		16.8	17.2	b
9.5	38	31.7	53.7	
9.5		47.5	23.7	
9.5		48.5	49.7	
9.1	40	13.4	52.0	K
9.5		19.9	17.0	
9.4		20.6	54.7	R
9.5		26.5	4.8	
9.5		48.3	29.8	
8.0		50.7	2.0	K
9.5	42	14.1	19.6	
9.5		32.8	36.9	
7.5		34.5	56.8	K
9.0		39.9	10.8	K
9.3		43.5	22.4	
5.8		58.8	38.0	K
8.5	43	7.4	15.4	K
9.5		10.1	23.4	
9.5		45.8	32.1	
9.3	44	9.8	41.7	R
9.5		48.5	52.6	K
9.5	45	11.1	3.1	
9.5		27.8	44.3	
9.2		48.8	31.1	
9.2		54.5	33.5	
9.5	46	28.8	18.2	
9.5		49.4	12.3	
9.5	47	1.9	49.9	
8.2		8.4	34.2	L

	+	−
10 pr.	30.24	1.95

3021 — 3080 (15ᵐ–16ᵐ, +2°)

m				
9.5	47	38.1	37.7	
8.9	48	22.3	57.9	
9.5	49	5.5	9.7	
9.5	50	4.1	39.0	R
9.4	51	3.7	0.1	b
9.5		30.5	17.1	
9.2	53	27.8	48.8	
9.5		33.5	16.5	
9.5		51.0	1.9	
8.6	54	10.8	28.6	K
9.1		11.8	44.6	Rb
9.3	55	9.5	23.7	K
8.0		37.1	6.2	K
9.5	56	9.4	59.6	
9.5		29.8	35.2	
9.3		34.8	47.8	R
9.3		59.1	35.2	
9.2	57	1.8	41.5	b
9.5		36.8	36.9	
9.5		53.4	27.5	
9.3	58	13.0	16.7	
7.3		55.0	5.5	K
8.4	59	5.0	28.9	K
9.3		24.5	43.2	R
9.5		33.4	58.3	
9.2		39.9	55.9	K
9.5		50.8	54.2	
9.5	0	0.8	57.1	
9.1		8.4	43.2	R
9.4		25.5	17.9	
9.5	1	14.0	3.7	
9.5		29.4	35.5	
8.5		29.9	14.3	K
9.5		36.8	15.0	
8.7	2	5.8	55.1	K
9.2		26.7	55.9	K
9.5		49.0	35.9	
8.0	3	21.4	59.6	K
9.5		41.7	5.1	
9.5	4	11.1	26.9	
9.5		14.5	42.5	
9.3	5	3.6	54.1	
9.5	6	15.8	59.4	
9.5		40.8	14.7	
9.1	7	13.7	35.6	b
9.3	8	23.7	52.7	
9.5		45.0	40.4	
9.4		56.3	4.9	B
9.3	9	3.2	3.3	B
9.2	10	13.1	34.6	
9.2		21.8	25.1	b
9.4		50.3	59.2	
9.5		57.3	29.9	
9.2	11	7.0	52.9	K
9.4		13.3	11.2	
9.5		26.6	34.5	B
9.5		51.0	31.7	B
9.0	12	36.5	40.8	
9.5		46.8	53.3	
9.4		54.0	44.2	

	+	−
10 pr.	30.21	1.66

3081 — 3140 (16ᵐ, +2°)

m				
9.2	12	56.5	13.2	a
9.4		59.2	0.0	B
9.2	13	0.5	9.5	K
9.0		3.9	8.3	K
9.3		27.0	15.4	
9.5	14	2.3	44.3	
9.3		24.1	35.5	R
9.5		48.0	1.9	B
9.2		57.9	49.8	K
9.0	16	11.5	37.3	
8.9		13.8	33.8	
9.5		19.5	30.7	
9.5		27.0	40.4	
9.4		34.5	16.0	
9.5	17	31.0	43.6	
9.5		42.5	24.1	
9.5		44.9	57.3	
9.4	18	2.3	13.7	
9.5		11.5	41.1	
8.8		46.2	6.5	
9.5		57.5	32.0	
9.4	19	4.5	35.9	
7.2		5.9	49.9	K
9.4		15.9	54.5	B
9.2		17.0	28.2	
7.0		33.0	40.7	K
9.1	20	35.5	38.0	a
9.2		49.1	57.6	
9.4	21	2.0	6.5	
9.4		48.7	42.8	B
9.0		53.0	17.8	
9.5	22	8.5	8.3	
8.2		25.3	39.4	K
9.1		49.0	34.5	
9.3		54.4	18.5	K
9.5		57.0	34.5	
9.4	23	34.5	30.0	
4.0		37.0	17.1	K
9.2		42.3	4.8	
9.2		44.0	38.0	K
9.5		44.7	41.1	
9.5	24	14.5	18.2	
9.2		34.0	47.7	
9.5		42.5	19.3	
9.5	25	4.0	56.7	
9.5		29.4	57.7	
8.3		32.0	23.8	Lb
8.9		43.3	51.8	K
9.4		48.6	26.4	B
9.5	26	1.5	55.3	
9.3		25.0	37.7	
9.4		35.5	23.8	
9.5	27	8.5	55.7	
9.5		26.3	0.4	
9.0	28	15.0	20.0	
9.3		43.7	58.7	B
9.3		53.0	26.8	
9.5		58.7	55.7	
9.5	29	11.0	50.9	B
8.8		21.5	20.0	Kb

	+	−
10 pr.	30.19	1.38

3141 — 3200 (16ᵐ, +2°)

m				
9.2	29	43.3	50.0	aB
8.6		49.0	20.7	K
9.5		51.0	43.2	
9.5		55.2	49.3	
9.5	30	16.0	9.4	
9.5		18.5	15.8	
9.3	31	5.0	49.9	
8.8		32.0	51.5	K
9.2		42.5	30.4	
9.5		59.9	57.0	
9.2	32	38.0	29.2	K
9.3	33	3.0	37.2	
9.3		18.5	2.4	
9.5	34	10.3	59.6	
8.1		49.9	33.2	B
9.2		59.3	2.7	
9.0	35	0.2	21.7	
9.5		4.0	31.4	
9.5		27.0	51.5	
9.5		27.0	30.0	
9.1	36	25.1	47.6	Kb
9.0		29.5	26.8	K
9.5		35.0	11.8	
9.5		39.2	5.9	
9.5		51.5	51.5	
8.1	37	25.0	36.6	K
9.5		39.5	14.7	
9.5		43.5	12.9	
9.0		55.0	33.8	K
9.2	39	1.0	5.7	
9.3		3.0	35.3	J
8.2		19.4	35.2	L
9.0		27.6	29.0	
7.5		36.0	30.4	L
6.6		51.1	20.3	Lb
8.4	40	5.9	26.2	L
9.5		58.1	27.6	
8.2	41	3.3	59.2	K
9.2		15.5	51.9	
9.4		25.8	9.7	
9.4		28.1	21.8	
9.5		38.0	15.6	B
8.9	42	11.1	20.8	K
8.9		26.6	9.0	Kb
9.3		33.1	29.1	
9.0	43	10.2	28.7	
9.5		34.5	13.8	
9.5	44	7.5	17.0	
9.5		8.1	3.4	
9.5		27.8	18.7	
9.2		34.9	3.5	b
9.5		35.6	7.0	
9.3	45	36.1	30.5	
*9.1	46	6.2	4.0	
9.3		17.8	38.1	
9.2		33.5	44.0	b
9.5		49.3	47.2	
8.7		49.7	5.3	K
9.5	47	33.0	23.5	
9.5		33.7	27.7	

	+	−
10 pr.	30.17	1.15

2936 a				
9.2	8	4.0	36.6	B
2941 a				
9.5	9	24.3	2.3	B

3193 a				
9.7	46	1.0	10.5	B

3201—3260

16ᵘ—17ᵘ | +2°

m	′	″	′	
9.3	48	26.8	27.6	
9.5		37.1	53.4	
9.5		44.8	23.5	
9.5		56.6	15.2	
9.5	49	3.1	41.5	
9.5		25.4	4.3	
9.5		44.9	9.2	
9.5		56.5	27.0	
9.4	50	4.5	12.1	
9.5		4.5	39.8	
9.3		12.4	14.1	B
9.3		43.2	34.2	K
9.5	51	15.5	25.8	
9.5		35.8	20.7	
9.5		41.1	35.3	
9.2		43.7	53.9	*R*
9.2		53.9	3.2	
9.2	52	21.0	36.6	*R*
9.2		28.5	34.5	K
9.5		56.8	2.4	
9.5		58.1	20.0	
9.5	53	14.2	58.9	
9.1		29.8	8.8	K
9.5		30.5	20.5	
9.4		44.1	2.1	
7.7		48.5	45.4	K
9.5		51.5	2.6	
9.0		58.8	58.5	
9.1	54	2.8	49.5	
8.8		48.5	26.3	
9.4	55	12.8	25.0	
9.2		20.2	48.5	K
9.5		37.8	23.8	
9.5	56	4.4	55.0	
9.0		18.2	42.2	K
9.5	57	20.5	29.8	
9.0		20.7	58.1	K
9.2		49.9	55.4	
9.4		52.1	41.8	B
9.1		55.1	44.7	
8.7	58	2.7	8.3	
9.0		3.8	27.7	B
9.0		13.9	28.9	B
9.2		27.6	59.1	B
9.5		33.7	0.8	
9.5	59	4.5	25.3	
9.1		15.4	28.0	K
9.3		56.8	49.5	
9.5	0	20.1	38.1	B
9.5		58.9	38.8	
9.5	1	18.5	38.1	
9.2		24.4	25.8	*n*B
9.5		43.8	17.0	
8.8	2	42.3	53.7	K
9.5		50.5	57.1	
9.0		53.5	40.8	K
9.5	3	18.6	49.5	
9.5		30.5	0.6	B
9.5		54.8	57.8	
9.3	4	9.7	15.2	R

10pr. | + 30.16 | — 0.94

3261—3320

17ᵘ | +2°

m	′	″	′	
8.8	4	28.3	54.8	K*b*
9.2		37.1	21.4	R
9.5		42.8	57.4	
9.0		49.8	19.6	K
8.9		57.4	51.5	K
8.7	5	2.5	18.7	K
9.5		3.9	47.5	
9.5		19.8	58.9	
9.2		34.2	31.9	K
9.5	6	28.8	2.9	
9.4		29.6	46.2	R
9.4		46.4	26.5	B
9.4		51.5	20.7	B
9.5		59.8	15.5	
9.5	7	4.7	55.5	R
9.2		17.0	6.8	R*b*
9.5		43.4	58.0	B
9.5		47.5	50.2	R
9.4		57.0	58.2	B
9.5	8	20.4	23.8	
8.4		35.8	51.8	K
9.5		47.5	49.7	
6.5		55.8	21.0	L
9.5	9	18.6	2.8	
9.5		42.7	36.4	
9.0		51.8	7.4	R
9.5		55.4	48.8	
9.5	10	5.4	54.6	B
9.1		7.7	41.7	
9.3		25.2	16.7	
8.3		36.8	48.9	R
9.3	11	15.2	8.5	R
9.5		41.6	39.2	
9.5	12	2.2	6.1	
8.6		19.7	43.0	R
7.0		27.7	18.7	K
9.1		50.7	18.1	K
9.0	13	30.3	43.3	R
9.3		55.7	47.5	
9.3	14	4.1	13.2	R
9.3		23.1	4.5	
9.1	15	3.2	28.8	R
9.5		5.3	3.8	
9.5		14.7	37.5	
9.5	16	16.2	0.5	
9.3		30.1	42.7	
9.2	17	9.2	49.6	
9.3		35.2	38.5	R
8.6	18	8.7	42.9	B
9.5		9.5	53.4	
9.4		12.0	31.2	B
8.0		32.6	17.4	K
9.2		37.7	13.2	K
8.5		53.7	13.2	K
9.5	19	13.8	58.2	
9.0		34.5	26.7	
9.5		35.4	29.9	*a*
9.0		37.0	28.4	R
9.5		49.9	19.5	
9.4	20	42.8	0.7	B

10pr. | + 30.15 | — 0.71

3321—3380

17ᵘ | +2°

m	′	″	′	
9.0	20	45.5	1.7	K
9.3		56.7	59.3	
8.5	21	1.7	19.8	K
9.0		14.6	32.0	
9.5		20.6	53.7	
8.8		22.9	52.2	R
9.5		32.2	30.2	
9.2		56.7	50.3	B
8.8		56.7	48.0	B
9.5	22	31.8	12.9	
9.3		46.8	53.8	R
9.4		58.6	26.0	B
9.3	23	8.7	33.7	
9.0		16.3	7.7	K*b*
8.8		25.0	26.8	K
9.0	24	4.1	5.1	K
5.5		5.9	50.8	L
8.8		12.2	41.6	
9.3		21.0	21.5	R
8.3		35.2	21.3	R
7.8		47.1	55.9	L
9.5		58.7	48.2	
8.0	25	5.0	11.1	K
8.0		8.2	30.6	R*b*
8.3		28.3	56.9	K
9.5		33.5	4.6	
9.5		52.3	1.5	
9.4		54.6	27.9	
8.1		56.6	32.3	K
9.5	26	10.2	23.3	
8.7		18.5	27.7	K
9.1	27	5.2	16.4	K
9.5		16.5	38.8	B
9.3		20.7	54.8	
9.5		30.4	2.2	
9.3		38.7	21.2	
9.1		57.2	34.0	K
9.5		57.8	38.9	
9.1	28	18.5	25.0	K
9.3	29	7.0	42.6	
9.5		17.8	6.1	
9.3		32.2	51.7	
9.5		32.2	56.5	
9.5		52.6	47.1	B
9.4	30	0.6	47.6	B
9.5		59.4	23.6	
9.5	31	0.7	17.6	B
9.5		24.6	52.7	
9.1		28.4	27.3	R
7.8		41.5	45.0	K
9.5		41.5	51.7	
8.5		45.5	9.0	K
6.7		50.3	6.8	K
9.3	32	6.7	48.2	
9.2		31.6	29.8	*a*B
8.8		36.5	6.3	K
9.4		38.8	30.2	*a*B
9.3	33	5.7	11.8	
9.4		36.9	21.7	B
9.4		45.8	22.7	

10pr. | + 30.14 | — 0.49

3381—3440

17ᵘ | +2°

m	′	″	′	
9.4	33	59.9	1.8	
9.5	34	15.7	6.6	
9.5		25.8	16.0	
9.0		27.7	33.7	
9.0	35	15.2	49.6	K
9.1		25.7	52.4	K
9.1	36	16.7	27.8	
8.5		31.5	4.5	K
9.5	37	13.9	14.8	B
6.5		17.7	39.9	K
6.5		18.7	39.9	K
7.8		27.0	30.9	K
9.5	38	0.2	48.5	
9.5		20.0	32.5	
9.3		41.5	29.1	
9.3		43.3	55.0	
9.5	39	26.4	7.5	
8.5		27.7	48.9	R
8.9		37.1	54.2	
9.2	40	9.3	56.8	
9.5		19.5	55.4	
8.8		20.5	26.7	
3.5		37.4	45.2	K
9.3		39.6	53.6	
9.3	41	30.2	53.0	
6.8	42	0.4	1.0	K
8.2		47.2	17.0	K
9.3		55.5	49.3	
9.5	43	4.2	52.0	
9.3		12.8	10.1	
9.0		13.3	7.2	K*b*
9.3		43.2	50.2	
9.4	44	14.8	3.6	R
9.5		24.2	27.7	
8.0		36.5	55.7	S
9.2		42.8	13.7	*b*
9.4		48.4	37.7	B
9.3	45	38.5	5.8	
8.5		39.2	51.0	
7.5	46	2.7	42.3	L
9.2		51.8	10.2	
8.5	47	4.2	47.1	L
9.4		7.9	25.0	
9.3		8.3	36.8	
9.5		32.7	33.3	
9.2		33.5	22.9	R
7.1	48	18.6	7.4	K
9.1		19.7	30.6	
9.5		50.0	5.7	B
9.5	49	32.2	33.0	
9.3		45.3	52.3	B
9.5		49.3	12.5	B
9.5		52.8	52.2	B
9.3		55.7	36.1	
8.1	50	29.7	55.0	K
7.0		33.2	17.0	K
9.3		37.5	15.2	B
7.3		45.8	45.8	K
9.5		56.9	34.3	
9.5	51	17.8	9.1	

10pr. | + 30.14 | — 0.25

3441—3500

17ᵘ—18ᵘ | +2°

m	′	″	′	
9.3	51	32.2	37.8	
9.4		42.3	54.4	
8.0		43.2	4.0	K
8.7		44.8	2.2	K
9.3		58.5	15.6	
9.3	52	8.6	12.9	B
8.8		11.7	21.5	R
9.0		13.7	32.7	
9.0		16.0	39.2	
9.5		35.8	22.5	
9.5		36.2	44.4	
9.5		38.7	37.2	
9.5		44.0	55.9	
9.0		46.8	52.7	
9.5		50.6	21.7	
9.5	53	5.9	19.1	
9.1		17.7	44.0	
4.0		23.4	55.4	K
8.5		25.7	55.4	K
9.5		31.5	35.1	B
9.0		49.2	13.6	B
9.4		53.2	30.5	B
9.0		59.3	45.8	
9.4	54	38.7	11.9	
9.4		43.3	51.1	B
9.5		44.1	5.6	
9.4		45.0	53.1	
9.5		46.8	55.4	B
9.5		58.1	53.1	
8.8	55	19.2	46.4	
8.9		23.7	18.1	
9.5		24.8	10.6	
8.0	56	7.5	30.5	K
9.2		14.0	20.2	
9.5		14.5	39.3	B
9.4		16.0	46.3	B
9.5		16.4	40.7	
9.3	57	14.7	51.3	
9.5		16.2	41.3	
9.5		24.0	34.3	
9.4	58	3.1	3.7	
4.0		7.9	32.7	L
9.3		40.2	23.3	
9.5		49.8	22.3	B
9.4		53.3	20.8	
9.3		56.0	12.6	B
9.5		59.7	35.0	
9.5	59	0.2	18.2	B
9.0		10.6	40.0	K
9.2		20.3	2.1	
9.3		35.2	39.1	*a*
9.5		35.2	56.7	
7.1	0	4.0	28.2	K
9.3		5.5	57.4	
9.3		14.6	6.5	
9.5		35.4	18.5	
9.0		48.2	37.3	
6.8		49.5	12.1	K
9.0		52.4	35.1	
9.4		57.0	13.9	

10pr. | + 30.14 | — 0.07

3356a

9.5	27	46.7	11.1

3359a

9.5	28	51.7	13.2

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
	18°	+2°			18°	+2°			18°	+2°			18°	+2°			18°—19°	+2°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	1 11.6	32.0		9.4	11 52.0	58.6	B	9.3	28 25.5	32.4		9.1	39 23.7	43.4	K	8.9	50 32.5	- 0.0	
9.5	12.7	28.2		9.0	12 22.1	3.5		9.0	41.3	27.2	K*b*	9.5	38.2	5.9	B	9.4	44.3	11.3	
8.4	18.2	23.8	L	9.5	24.6	53.7		9.5	58.1	20.8		8.7	56.9	27.1	K	8.9	51 5.1	11.5	K
7.8	34.0	13.3	L	8.9	37.5	37.5	K	9.4	29 3.8	22.5	B	9.5	40 21.6	37.3	B	8.8	17.9	25.1	K
9.2	44.6	11.0	*a*	9.4	55.8	54.5		9.5	16.8	33.3		9.4	25.1	15.1		9.4	20.3	13.5	
9.4	49.8	41.0	B	9.2	56.1	9.2	K	8.0	56.6	51.8	L	9.4	46.7	41.3	B	9.1	27.9	17.5	K
9.5	52.3	39.9		9.2	13 4.2	51.9		8.7	30 1.2	7.8		9.4	49.7	29.5	B	9.5	42.3	2.2	
9.4	58.0	37.2		9.5	19.9	30.8		7.9	8.2	30.8	L*b*	9.4	50.2	50.1		9.5	50.2	14.6	
9.3	2 5.8	13.3		8.8	32.0	45.9		9.5	20.1	2.2		9.2	41 2.8	17.8	K	9.5	52 46.2	48.9	B
8.4	11.0	34.7	K	9.5	41.4	5.5		9.2	34.3	52.6		9.2	30.7	23.0		8.8	54.3	25.3	
9.5	38.6	58.0		9.5	41.5	55.6		9.5	41.2	1.5		9.0	31.5	15.6	K	8.0	57.7	45.7	L
9.5	41.1	53.3		9.0	45.8	34.8		9.2	55.2	42.0	*a*B	9.5	42 55.4	44.2		9.3	53 37.1	19.9	
9.0	42.0	52.7	K	9.1	49.3	4.2		8.9	31 19.6	17.0	K	8.5	43 5.9	47.3	K	7.3	53.2	17.3	*b*
8.8	50.8	21.5	K	9.3	55.7	44.6		8.6	19.8	28.6	K	9.0	10.9	16.8		9.5	54.0	38.5	B
9.3	57.5	11.3		9.1	14 1.6	55.1	K	9.5	37.5	2.4		9.0	40.8	23.2	K	9.4	56.3	14.1	B
9.3	3 4.0	34.0		9.1	5.1	48.3		8.6	39.6	18.7	K	9.4	44 16.0	22.3	B	7.3	54 15.9	23.1	B
8.5	6.1	30.5	K	9.2	49.3	11.2	K	9.1	46.6	24.2		9.5	17.4	42.8	B	9.4	47.4	49.5	
9.5	36.6	47.0		9.4	15 18.6	57.5		9.4	58.5	41.9		9.5	28.7	35.3		8.9	48.2	17.3	
9.5	39.2	6.0		9.4	23.3	45.8		8.8	32 15.7	36.9		7.8	32.6	52.2	L	9.5	50.5	49.3	
9.5	45.3	47.2		9.3	27.2	26.9		8.1	19.0	58.1	K	8.7	46.1	22.0	K	9.3	59.8	33.1	
9.3	54.4	19.8		9.5	28.1	50.7		9.5	24.5	50.3		9.2	47.0	5.7	*a*B	9.5	55 18.9	43.6	
9.5	4 9.9	21.5		9.4	33.3	40.7		9.5	27.8	6.7		8.7	45 0.7	40.7		9.5	26.0	8.2	
9.5	11.5	44.8		9.0	43.0	8.8	K	9.5	31.6	47.1		9.2	8.6	0.6		9.2	36.4	20.1	*a*
8.3	13.1	7.6	K	9.5	47.4	58.8		9.3	43.3	12.4		9.5	13.0	46.3		9.4	56 15.5	53.1	K
9.5	26.4	6.2		9.4	16 14.9	2.4		9.5	50.2	49.2	B	9.5	18.4	1.8		7.5	18.1	20.4	K
9.2	59.3	49.4	*a*	9.2	18.5	40.5	*b*	7.9	33 14.7	33.6	L	9.5	28.0	26.7	B	8.0	28.0	16.6	K
9.5	5 18.2	26.9		8.8	31.9	23.7	K	9.3	16.8	26.0		8.3	42.6	39.9	K	9.5	39.1	23.0	
6.8	24.4	47.4	L	9.5	17 29.7	50.6		9.4	18.1	34.5	*a*	9.3	43.4	14.9	B	9.4	44.0	47.4	
9.4	35.8	27.2		9.5	30.3	51.6		8.8	18.8	58.6	K	9.5	46 14.7	35.2		8.5	50.1	18.8	K
9.0	41.9	12.5		9.0	30.5	17.6		8.8	19.7	59.6	K	9.5	17.5	49.6		9.2	50.8	44.9	
9.5	42.5	37.8		9.5	36.7	56.9	B	9.5	34.0	14.4		9.5	19.1	34.8		9.0	54.4	54.1	
7.1	49.0	56.6	L	9.4	51.8	54.5		8.7	41.9	53.9	K	9.4	23.0	30.1		9.5	57 15.7	16.3	
9.1	50.1	12.7	*a*	9.4	18 20.4	21.1		9.3	34 3.0	59.0		9.5	27.8	50.3	B	9.3	21.1	32.4	K
9.5	6 19.6	54.1		9.5	20.8	51.3		9.5	13.3	5.1		9.5	50.6	18.3		8.2	27.5	35.4	K
9.3	22.9	59.5		9.5	19 9.5	50.4		8.2	35.4	3.6	K	9.5	52.4	14.3		9.4	29.3	31.7	K
9.5	28.1	12.4		9.5	13.3	18.5		9.2	40.9	6.1		8.4	58.7	47.9	B	8.8	30.0	47.3	
6.8	34.6	22.0	K*b*	8.9	20 4.4	34.7		9.4	50.0	35.8		9.5	47 16.6	40.6		9.5	42.0	9.2	B
9.5	50.2	47.8		8.2	19.7	17.5	L*b*	9.5	52.5	50.8		9.5	28.2	6.2		9.0	45.1	21.5	B
9.5	7 2.3	54.7		9.3	21 13.6	58.3		9.5	35 2.9	21.6		8.7	30.7	35.8	K	9.4	46.0	24.0	
9.4	4.3	56.7		9.4	22 5.1	44.9		9.1	6.5	9.6		9.1	32.5	41.1	K	9.5	53.7	40.5	
9.4	6.8	41.8		9.3	15.2	47.4		9.5	22.2	14.6	B	9.4	51.8	56.3		9.1	57.8	32.0	K
9.4	7.8	52.7	B	9.5	32.1	54.7		9.5	52.4	19.9		9.5	48 3.0	18.9		9.4	58 5.0	44.9	B
9.5	24.4	5.8		9.5	57.5	32.4		9.5	36 2.9	18.5		9.3	4.2	40.2		9.0	22.1	58.6	B
9.2	53.8	27.1	K*b*	9.2	23 25.7	27.4		9.5	5.2	13.6		8.5	7.1	56.5	K	9.5	22.2	33.9	B
8.8	8 26.6	23.4	K	9.2	33.2	3.8	*b*	9.5	15.4	55.7		9.5	30.0	44.2		9.5	34.4	5.5	
9.5	35.5	52.5		9.5	51.3	42.0		8.4	16.4	58.0		9.5	42.4	32.5		9.5	59 22.3	52.6	
6.3	48.2	20.7	K	9.5	24 5.9	4.8		9.2	26.3	31.3	K	9.5	52.1	6.9		9.5	36.2	46.4	
9.1	9 16.8	28.4		9.2	36.1	53.6		7.8	38.7	28.9	K	9.5	55.4	7.5		9.5	36.3	12.9	
9.3	32.0	59.2		9.5	59.0	44.9		9.5	58.4	3.2		9.3	49 7.9	5.7		9.0	0 0.3	55.6	
8.6	57.9	54.5	K*b*	9.5	25 0.2	8.9		8.9	37 7.6	11.0	K	7.0	8.1	17.2	K	9.5	16.2	27.3	*a*
9.5	10 16.6	55.4	B	8.8	9.9	49.4	K	9.2	12.8	11.8		9.3	8.5	27.4		8.5	26.0	2.8	
9.5	18.2	2.5		9.0	25.4	49.4	K	9.1	19.8	39.3		9.3	22.2	56.1		9.3	31.3	48.2	
9.4	27.7	22.4		9.5	26 7.4	23.6		9.1	37.3	45.0		8.7	24.7	1.4	B	9.5	44.3	38.6	
9.0	28.6	55.4	K	9.5	9.0	0.4	B	9.5	38 2.4	20.6	B	9.4	31.7	22.2		9.2	44.9	8.3	
9.5	48.4	57.3		9.4	27 4.7	24.9	B	9.5	34.1	8.5		9.5	32.9	29.5		9.5	54.1	20.5	
9.5	49.5	44.5		9.5	13.6	39.4		8.2	57.2	48.8	K	9.4	36.7	17.2	B	9.1	1 9.7	17.4	*a*
8.8	59.1	35.2	K	9.4	15.5	5.3		9.0	39 4.4	43.8	K	8.2	40.6	16.2	K	9.5	38.7	38.0	
9.3	11 0.4	39.5		9.5	26.4	0.1		9.5	5.0	49.5		5.8	59.2	21.2	K	9.2	45.9	20.1	
8.2	10.3	54.8	K	9.4	58.0	17.0		9.0	11.1	25.1		9.5	50 8.1	51.7		9.4	2 10.5	55.0	B
9.5	19.2	6.4		9.2	28 4.9	20.3		9.4	20.1	45.0	B	9.2	24.5	32.0	K	9.5	19.9	55.2	B
10pr.	*30.14*	*0.09*		*10pr.*	*30.14*	*0.26*		*10pr.*	*30.14*	*0.48*		*10pr.*	*30.15*	*0.67*		*10pr.*	*30.16*	*0.83*	

3685a				
9.6	*40 31.9*	*29.7*	*B*	

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	19ʰ	+2°			19ʰ	+2°			19ʰ	+2°			19ʰ	+2°			19ʰ—20ʰ	+2°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.5	2 25.3	14.7	K	9.5	14 34.1	15.7		9.2	25 41.8	8.8		8.5	38 21.5	32.5	K	8.8	49 35.7	24.5	B
9.5	36 0	57.3	B	9.0	46.0	54.2	K	9.5	26 0.9	55.3		9.4	25.4	44.4		9.3	38.2	30.6	*a*
9.0	48.5	20.9	K	9.5	51.3	19.3		9.5	8.7	7.8		9.3	36.8	32.2	*a*B	9.5	55.6	49.1	
8.0	51.7	7 6	K	9.1	15 36.8	23.5	*a*	9.5	28.4	0.4		9.5	39.1	7.8	B	8.9	50 24.4	36.8	K
9.3	3 3 5	36.1	B	9.5	55.3	2.1	*a*	9.5	54.7	53.9		9.3	46.9	16.8		9.3	31.5	54.7	
9.5	5.4	40.6		9.1	16 10.3	55.1	*a*	9.4	59.6	24.0		8.4	39 11.2	30.5	K	9.5	35.1	45.3	
9.5	14 0	3.6		9.5	11.5	27.7		9.5	27 1.3	33.0		9.3	26.0	6.6		9.4	50.6	14.6	*a*B
9.4	21.4	41.3		9.5	35.2	23.0		9.5	19.4	22.6		8.7	58.9	36.2	K	9.2	53.1	58.7	K
9.5	36.7	2.4		9.3	38.2	5.1	*a*B	9.5	30.6	48.0		9.1	40 1.8	41.4		9.5	51 25.0	25.9	
9.5	47 0	15.8	B	9.4	52.4	30.3	B	9.3	44.1	36.1		9.4	4.0	55.6		9.1	26.5	48.3	
9.5	4 10.2	52.2		9.5	59.5	0.0	B	9.2	28 1.0	59.4		9.5	27.0	7.5		9.5	34.2	32.7	B
9.4	11.7	56.9		9.0	17 7.4	36.3		7.2	8.3	35.9	K	9.5	29.9	15.7	B	9.5	52 1.6	18.0	
9.2	17.3	21.7	K	9.5	11.6	46.0		9.2	33.8	1.0		9.5	52.4	37.9		9.5	15.8	13.7	
9.5	27 5	10.0		8.7	31.0	1.2		9.1	37.9	22.7		9.2	56.6	47.9		8.9	39.6	11.9	
7.0	46.4	23.2	K	9.5	32.5	36.5		9.5	41.8	55.0		9.2	41 30.8	38.0		9.3	44.6	15.0	*a*B
9.2	52.0	9.3	*a*B	9.0	52.1	59.5	K	9.5	55.3	44.4		9.3	42 12.2	38.9		9.5	49.7	49.3	
9.4	55 0	12.2		8.7	52.3	10.3	K	9.5	29 11.7	36.3		8.9	13.3	29.5	K	9.5	52.3	21.1	B
9.5	5 16.5	39.0		9.1	52.8	27.9		9.5	16.1	12.3		8.9	18.8	13.3		7.3	53 5.4	56.7	K
9.4	22.2	21.1		3.2	18 11.4	50.0	K	8.5	25.3	43.9	K	9.5	23.1	19.3		9.4	9.0	18.1	
9.5	38.1	17.4		9.4	14.1	26.9		9.1	48.7	8.6	*b*	7.9	26.0	35.6	K	9.2	13.1	36.2	*b*
9.5	42.1	46 9		9.5	16.2	54.9	*a*B	9.3	55.4	15.8		9.2	55.3	11.9		9.5	48.3	26.9	
9.5	57.9	32.5		9.0	18.0	4.8		8.5	57.7	39.6	K	9.5	43 16.0	7.0		9.4	48.9	43.8	
9.1	6 14 6	6.3	K	9.0	18 5	54.6	B	9.5	30 14.6	45.1		9.5	17.6	10.8	B	9.4	57.5	52.1	
5 6	24.0	2 9	K	9.5	26.3	57.1	B	9.1	33.0	33.4		9.3	37.6	48.0		9.5	54 3.0	2.2	
8.8	37.0	22.4		9.5	37.7	22.6	B	9.3	31 1.7	44.8		9.4	37.7	52.1		9.4	12.9	7.1	B
9.2	44.2	50.3	*a*	9.5	51.1	59.9		9.5	6.8	45.6		8.9	46.8	23.8		9.4	24.3	10.7	
9.3	7 10.5	47 6		9.3	19 50.4	41.6		9.5	19.4	5.2		9.1	48.7	34.4		9.5	24.3	16.4	B
8.8	14.3	40.8		9.1	57.0	54.8		9.5	34.2	51.9		8.8	44 3.0	58.2	K	8.4	24.4	51.6	
9.5	14.4	2 6		8.9	20 5.9	19.2	K	8.9	41.8	13.4	K	9.5	6.8	52.1		9.5	44.5	22.1	B
9.5	39.6	56.5		8.7	18.6	12.8	K	8.6	44.3	6.8	K	9.2	23.4	50.9	K	9.4	48.5	27.6	B
9.5	45.0	36.1		9.5	40.4	3.8		8.9	51.2	0.3	K	9.4	45 3.7	44.7		9.4	51.9	12.4	
9.5	48.1	11.2		7.0	21 4.4	38.0	P	8.5	56.1	25.7	K	9.5	4.4	49.8		9.4	55 0.8	34.3	
8.7	57.6	7.4	K	9.3	28.1	20.6	B	9.3	32 2.0	24.0		8.3	7.1	35.2		9.4	6.8	58.0	B
9.5	8 28.1	3.7		9.2	28.8	22.9	*a*	9.5	6.9	49.1		9.3	24.5	9.3		9.5	23.6	40.9	
8.4	9 8.3	54.1	K	9.1	33.8	53.0		9.4	33.9	30.0	B	9.4	27.1	49.2	B	9.4	23.7	10.2	
9.3	17.8	44.7		9.3	38.5	59.9		9.3	50.2	43.7	B	9.5	31.0	4.6		7.9	31.7	54.9	K
9.4	20.2	9.1		8.6	47.8	22.0		8.5	57.0	32.4	K	9.3	34 7	48.7	B	9.5	39.9	18.3	
9.5	42.7	16.7		9.3	22 5.4	9.3		9.5	33 5.5	11.9		9.3	37.1	28.0		9.5	49.6	14.6	
9.3	49.6	55.5		8.0	14.0	47.8	S	9.5	8.0	0.7		9.5	54.7	4.6		9.5	55.1	11.1	
9.1	10 17.2	9.7		9.5	38.0	29.7		9.3	9.4	38.0		9.3	46 0.2	55.3		9.0	56 16.4	4.9	K
9.3	35.9	25.7		9.5	44.5	41.5		9.2	28.4	9.5		9.5	8.7	38.7		9.3	24.7	27.7	
9.0	11 14.0	11.4	K	8.9	49.7	1.8		9.2	42.1	22.2		9.2	16.8	23.9	*a*B	9.5	52.6	20.8	
8.8	20.7	15.6	K	9.3	52.4	20.1		9.1	47.5	58.5		9.5	19.6	51.3		9.5	55.3	46.9	
9.5	28.6	48 3		6.9	54.3	36.4	K*b*	9.2	54.2	49.8		9.1	32.6	29.2		9.5	57 24.9	34.1	
9.2	31.3	25.7		9.5	23 25.9	32.2		9.5	57.2	10.5		9.0	33.0	51.3		8.3	35.3	1.9	K
9.5	31.6	32 8	B	9.5	27.2	50.4		9.5	34 3.4	7.2	B	9.5	47 5.3	35.0		9.5	58.2	58.8	
9.5	51.7	44.1		9.5	43.5	49.1		9.3	4.1	12.0		9.3	15.0	11.2		9.0	58 26.0	28.5	B
8.9	12 17.1	50.7	K	8.9	54.7	8.5		9.5	24.0	33.4		9.5	16.2	18.4		9.3	59 6.7	14.7	
9.5	33.4	54.7	B	9.4	24 1.6	7.3		9.2	35 4.0	9.4	*a*	8.6	19.5	46.4		9.2	8.0	34.2	
9.3	40.7	7.2		9.5	6.9	55.2		9.1	4.4	24.9	*b*	9.2	26.2	49.3	*a*	9.5	14.9	44.9	
9.5	43.2	11.0		9.2	10.2	43.4	*a*	9.3	50.9	32.4		8.0	37.1	3.8	K	9.0	16.8	13.6	
9.1	45.5	4.0		9.4	13.8	13.3		9.5	36 5.9	43.3		9.5	43.8	54.6		9.0	0 11.9	42.4	
9.4	13 0.9	9.1		8.6	28.6	49.1	K	9.5	17.5	22.7		9.5	48 36.0	7.4		7.1	24.3	2.2	K
9.5	16.2	56.2		9.5	44.1	9.8		9.5	46.1	5.4	*a*B	9.5	38.4	47.2		9.5	31.7	54.3	
8.9	22.0	30 9	K	8.8	25 4.9	15.5	K*b*	9.5	52.3	22.4		8.7	49.9	20.1	K	9.5	39.9	7.3	
7.7	22.2	40.3	K	9.1	11.2	55.0	K	9.4	37 2.3	57.9		9.1	49 1.6	20.8	K	9.3	1 6.6	47.1	B
9.5	30.2	15.7		9.5	13.5	20.6		9.5	24.2	14.4	B	9.4	15.8	6.4		9.3	57.4	6.6	B
8.4	35.3	2.6		9.3	32.8	23.1	K	9.5	44.5	39.3		9.1	18.3	41.9		9.3	2 0.0	10.5	
9.3	14 11.1	32.9		9.5	39.3	57.1		8.1	56.1	33.8	K	9.5	29.0	22.6	B	9.2	10.5	7.8	
9.2	13.6	45.8		9.2	39.3	17.9		8.9	57.1	59.9	K	8.5	34.1	28.7	K	9.5	48.6	4.8	
10pr.	30.16	0.98		10pr.	30.17	1.14		10pr.	30.18	1.30		10pr.	30.19	1.48		10pr.	30.20	1.61	

3826ᵃ

9.6 | 7 4.2 | 6.1 | B

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	20°		+2°			20°		+2°			20°		+2°			20°—21°		+2°			21°		+2°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.9	3	17.1	15.8		9.3	18	18.4	27.4	*B*	9.0	33	17.5	34.2		9.5	52	11.6	4.2		9.5	13	11.7	52.4	
9.3		33.7	54.0		9.5		21.3	13.8		9.5		37.0	46.7		9.4		33.8	9.4	B	9.5		14.2	34.2	B
9.5		38.0	17.4		9.5		46.4	51.1		9.3		44.7	0.9		8.8		34.3	19.0	K	8.0		35.4	30.1	K
9.5	4	17.5	45.9		7.4		57.8	29.1	L	9.2	34	2.7	22.3	*Kb*	9.4		41.4	9.6	B	9.0		53.9	28.4	
9.2		45.4	19.2		9.5	19	1.0	6.5		9.3		14.0	2.8		9.3	53	35.2	23.2		8.0	14	2.9	22.1	*Kb*
9.5		47.9	39.5		9.5		6.9	13.3		9.5		16.1	23.9		9.5	54	3.3	48.6		8.5		3.9	17.0	K
9.4		51.7	30.9	B	9.2		25.0	14.2		9.0		38.5	26.5	K	9.4	55	5.0	9.5		7.7		24.4	29.5	K
9.1	5	3.3	48.8		9.2		38.0	47.8		9.5	35	7.4	47.8		9.5		7.4	3.1	*B*	7.2	15	17.9	19.0	K
9.1		4.5	9.0	*aB*	9.5		50.5	49.8	*a*	9.0		8.0	41.1		7.2		25.2	46.9	K	8.8		44.9	54.1	
9.5		24.6	34.7		9.5	20	6.7	30.4		9.0		27.0	35.2		9.4		29.1	12.7	B	7.7	16	4.7	9.6	K
9.5		30.5	0.3		9.3		10.0	46.4		8.3		28.7	28.9	K	9.4		30.4	16.8	B	9.5		49.6	11.0	
8.2		34.4	52.1	K	9.5		41.5	17.5		9.0		47.5	22.0		9.5		31.2	4.5		9.3		56.9	46.8	
9.5		42.2	59.8		9.5		46.4	48.1		9.3	36	16.9	56.4		9.4	56	13.9	23.9		9.5	17	10.9	55.5	
9.0		45.4	15.6		9.5		58.4	37.3		9.5	37	21.6	34.4		8.0		21.8	21.8	K	8.8		26.4	53.9	
9.3	6	16.1	17.2		6.8		58.5	26.8	*Pb*	9.2		22.1	58.6		8.2		51.7	25.7	K	9.3	18	2.9	37.1	
9.5		52.1	13.6		9.0	21	11.4	49.1		9.5		44.1	18.2		8.5	57	23.0	12.7		9.5		29.9	56.3	
9.5	7	8.6	41.5		8.8		35.2	48.5		9.2		48.0	15.4	*aB*	7.5		23.6	21.5	K	9 5		31.1	36.0	
9.4		14.9	21.0		9.5	22	10.6	39.2		9.5		49.3	18.1		8.2		26.9	57.9	*Kb*	9.0	19	25.3	55.9	K
9.5		19.5	15.3	B	7.3		27.4	31.0	K	8.5		52.2	45.3	K	9.4		36.2	57.9	*a*	9.5		26.2	24.3	
8.8		20.0	47.5		8.3		38.7	54.7		8.5	38	9.6	38.5	K	9.5	58	13.6	56.6		9.5	20	32.9	10.7	
7.8		37.4	58.2	K	8.8		39.1	27.5	K	9.5		23.5	16.1		9.5	59	17.7	14.1		9.5		40.8	5.6	
8.3		55.9	37.2	L	9.5	23	11.1	58.4		8.5		41.5	13.3	K	9.5		35.4	42.3		7.3		43.7	33.6	K
9.5	8	2.2	44.4		9.4		30.5	13.6		9.5		54.9	14.7	K	9.5		54.7	13.8		9.5		44.2	53.5	
7.7		14.5	25.0	*Lb*	9.5		35.0	24.2		9.5	39	31.3	53.4		9.5	0	25.8	55.9		9.0	21	34.2	33.6	K
9.5	10	22.7	14.0		9.5		36.4	34.2		9.1		35.5	36.7	*aB*	9.0		28.5	21.2	K	9.3	22	17.8	39.3	B
9.5		26.7	0.7		9.5		37.7	58.2		9.5		45.2	21.2	B	9.5	1	1.6	9.6		9.0		18.1	25.3	*B*
8.5	11	43.7	45.1		9.4	24	23.3	36.8		8.5		48.7	48.8	K	9.5	2	17.0	48.9		9.0		53.9	46.5	
9.1		56.9	21.2	*b*	9.1		25.2	2.8	*aBb*	9.5		53.7	51.9		9.3		36.3	34.6	B	7.8		58.4	9.6	K
9.5	12	19.8	15.9		9.5		25.7	43.2		9.5	40	15.1	21.8		9.5		36.7	39.7	B	9.5	23	10.1	10.5	
9.4		26.8	24.7	B	9.2		26.2	4.1	*a*	6.5		30.7	47.4	K	9.4		39.2	29.0	B	9.2		39.2	57.5	
9.0		33.2	9.1		9.2		28.9	36.7	*aB*	9.2		41.2	18.2		7.0		39.8	21.2	L	9.3	24	2.4	8.9	
9.3		41.5	27.7		9.4		38.9	35.4		9.5		41.9	36.6		9.2		54.6	8.3		9.3		21.9	39.8	
9.5		59.3	35.5		9.5	25	34.2	31.0		7.0		50.9	10.5	*B*	9.5		58.4	58.6		9.5		42.1	40.2	
9.5	13	0.2	16.0		9.1	26	25.0	59.3	*b*	8.8	41	49.4	43.2	*Kb*	9.5	3	9.5	32.9		9.5	25	9.9	32.2	
9.5		23.2	32.8		9.2		39.9	57.0	*a*	9.0	43	16.7	16.1		9.2		11.2	6.8		9.5		11.6	24.3	
9.4		33.0	25.0	*B*	9.5		42.7	0.8		9.0		26.2	32.1		9.5		56.2	18.7		9.5		32.4	0.3	
9.2		40.6	40.5		9.0	27	24.7	0.5	*Pb*	9.0		26.2	44.2		9.5	4	41.0	7.0		9.5		52.4	38.8	
9.4		52.5	21.9	B	9.2		44.2	42.8	*B*	9.5		48.4	50.1		9.5		45.0	50.2		8.5	26	4.4	38.5	K
8.9		59.1	21.9	K	9.5		56.6	28.8		9.5		50.5	12.4		7.5	5	26.6	4.3	L	9.5		25.0	7.7	
8.6	14	6.1	56.7		9.5	28	6.6	47.6	K	8.5		51.4	30.0		9.1		31.2	15.2	*aB*	9.3		33.6	37.8	*B*
9.3		22.6	19.5		9.5		18.7	8.5		8.2		55.9	56.9	L	9.0		36.0	50.0		9.5	27	1.9	35.7	
9.3		38.6	47.9	B	9.0		26.5	19.6		9.0	44	37.9	11.9	K	7.7		39.2	13.1	L	9.0		36.1	42.6	
8.8		43.3	57.6	K	8.0		28.7	48.5	K	8.5		56.1	54.6	L	9.2	6	12.1	8.4	*Kb*	9.3		37.4	30.2	
9.5		49.2	50.9		9.5	29	21.7	46.7		8.8	45	32.5	39.7		8.8		17.8	50 3		9.2		52.7	55.5	
8.5		51.8	43.5	K	8.6		36.2	32.8	L	9.5		48.4	50.1		9.5	7	27.7	52.9		9.5	28	13.9	41.4	
8.8	15	6.6	32.8		9.5	30	14.9	13.9		9.5	46	3.6	17.7		9.5		52.4	10.0		9.0	29	47.4	15.2	
9.5		32.3	13.1		9.5		19.4	32.8		7.5		11.4	27.9	K	9.5	9	5.9	35.4		9.5		49.9	35.4	B
9.0		39.8	55.5	*Kb*	9.5		21.5	16.2		9.2	47	22.1	54.4	*n*	9.5		8.4	5.1		9.5	30	18.9	25.2	
9.0	16	26.9	28.6		9.5		44.4	0.1		8.0		37.9	29.5	K	9.3		17.7	56.8		9.5	32	6.0	0.7	
9.2		38.0	54.1		8.8	31	0.7	50.5	K	9.3		43.5	27.4	K	9.5		20.9	49.6		9.0		50.4	35.7	
9.3		39.4	38.6		9.5		17.0	9.5		9.3		46.0	53.2	*a*	9.0	10	6.4	38.8	K	9.0	33	9.9	49.2	
9.2		45.7	28.3	*a*	9.5		21.2	4.9		9.0		51.7	57.9		8.5		31.0	58.7	*Kb*	9.5		10.4	44.0	
9.3	17	9.2	56.9		9.5		48.4	30.4		9.0		54.0	41.5		8.2		38.6	17.6	*Lb*	9.0		13.9	32.6	K
9.2		21.4	12.5	K	9.5		59.5	9.5		9.3	48	2.5	0.5		9.3	11	10.9	47.2		9.3		42.7	53.8	
9.3		26.8	8.5	B	9.0	32	13.5	12.2		8.5		32.9	49.5	K	9.5		14.5	1.2		9.5		54.7	7.3	
9.2		46.7	4.7		9.1		25.4	53.5	*a*	9.0		38.0	7.9		9.0		26.0	8.9	K	9.5	34	30.1	56.6	
9.5		54.3	20.8		9.5		34.6	41.3		9.0	49	55.7	19.6	K	9.5		30.4	18.3		9.5	35	7.8	8.3	
8.2		55.8	40.8	K	8.7		45.2	18.0		9.5	50	36.5	45.7		9.5		41.4	37.5		9.3		39.9	25.3	
8.8		58.3	42.4	K	*9.5		49.0	5.4		9.5	51	11.4	3.7		9.5	12	22.4	59.9		9.2	36	2.7	1.2	*b*
8.9	18	2.7	56.2	K	7.5	33	1.4	55.6	K	9.5	52	11.6	6.2		9.4	13	8.7	30.8		9.0		38.8	10.5	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*30.23*	*1.83*		*10 pr.*		*30.25*	*1.97*		*10 pr.*		*30.27*	*2.16*		*10 pr.*		*30.31*	*2.39*		*10 pr.*		*30.35*	*2.60*	

4219 a

9.3	*32*	*58.5*	*56.8*	*B*

4401 – 4460

	21ᵐ	+2°	
m	′ ″	′	
9.0	36 41.3	55.0	K
9.0	37 0.7	33.3	K
9.0	23.9	10.3	L
7.7	28.7	19.8	L
9.0	40.4	33.6	K
9.5	43.9	57.7	
9.2	58.8	1.0	
9.5	38 15.0	11.2	B
9.5	20.4	44.7	
9.5	39 13.5	52.9	B
9.5	30.0	55.5	
9.5	48.7	17.3	
9.5	48.7	39.9	
5.6	53.8	1.0	K
9.5	40 27.7	13.6	
9.5	47.8	5.4	
9.0	41 10.2	8.8	K
9.2	13.0	51.5	
9.5	31.1	3.2	
8.7	32.3	29.3	L
9.3	48.6	18.2	*B*
9.5	42 4.3	5.2	
9.0	4.5	39.8	
8.8	12.8	42.5	
9.0	14.6	50.2	K
9.3	23.3	29.3	
9.5	30.8	57.9	
9.3	41.2	0.7	
9.1	45.0	11.7	*a*B
9.5	43 2.8	27.9	
9.5	29.5	20.3	
9.2	31.8	52.6	
8.8	51.0	26.8	K*b*
9.3	44 15.7	5.6	
8.7	45 37.0	50.5	K*b*
9.5	49.6	26.5	
9.3	46 9.0	25.7	B
9.5	24.6	18.2	
9.0	47 22.4	8.8	K
9.2	27.2	7.5	*a*
8.8	47.5	10.9	K
9.3	52.3	35.9	
9.2	48 5.0	6.6	*a*B
9.4	5.5	4.3	B
9.5	28.6	12.7	
9.5	28.9	57.2	
8.7	49 39.5	5.3	K
9.3	40.5	3.9	
9.5	50 3.0	26.8	
9.2	13.8	55.6	*b*
9.3	39.5	43.2	
9.3	57.5	31.1	B
8.7	51 46.0	32.5	K
9.0	52 4.6	19.6	
9.4	16.0	2.0	B
9.5	37.6	21.3	K
8.8	53 19.3	5.8	K
9.0	39.0	46.4	
9.5	58.0	28.4	
9.1	59.1	15.0	
	+	+	
10 pr.	*30.40*	*2.76*	

4461 – 4520

	21ᵐ–22ᵐ	+2°	
m	′ ″	′	
9.5	54 1.2	21.8	
9.2	7.0	31.0	*B b*
9.5	40.0	46.0	
9.5	55 45.8	40.0	
8.0	47.8	28.6	K
9.0	56 22.5	36.3	K*b*
9.3	57 37.4	52.8	
9.5	51.0	38.0	
8.8	59 15.2	45.4	*B*
9.3	45.3	33.3	B
9.3	55.6	27.9	
8.9	0 16.5	42.5	K
8.3	1 35.3	22.7	L
7.2	47.5	1.4	K
9.3	3 9.7	4.7	
7.5	4 56.0	0.9	K*b*
8.8	5 42.3	36.6	K
9.5	6 5.9	21 3	
9.0	30.5	21.0	
9.5	7 8.3	46.0	
9.5	45.1	59.0	
9.3	8 19.0	25.8	
9.0	45.0	31.8	K
9.5	9 3.3	56.4	
9.0	32.9	18.9	L
9.5	34.1	36.0	
9.3	10 33.4	23.4	
9.5	47.7	0.9	
9.5	11 0.4	0.3	
9.3	18.0	55.9	
9.5	33.3	35.2	
9.3	47.7	38.0	
8.7	12 44.9	2.5	K
9.0	49.3	28.6	
9.5	58.3	22.7	
9.0	13 10.6	48.7	
9.0	41.6	57.0	
9.0	14 9.9	33.5	K
9.0	15 8.3	16.8	K*b*
*9.3	21.3	33.5	
9.5	16 5.2	32.4	
9.3	7.0	9.2	
9.5	18 .3	54.3	
9.5	19 19.2	31.3	
9.4	46.2	27.2	
9.5	56.7	51.0	
9.3	20 20.0	10.5	B
9.0	44.1	1.0	K
9.5	54.6	10.4	
9.5	21 23.0	52.7	
9.0	22 10.2	57.0	
9.5	15.0	18.0	B
9.5	37.4	12.4	
9.5	24 21.7	58.0	
*9.0	35.1	30.8	K
*8.0	25 26.0	16.1	K*b*
9.0	56.4	46.5	
*9.2	26 1.0	36.2	*a*B
*9.5	26.0	22.4	
8.8	32.8	0.3	
	+	+	
10 pr.	*30.45*	*2.97*	

4521 – 4580

	22ᵐ	+2°	
m	′ ″	′	
9.0	26 35.3	37.1	
8.5	58.6	59.1	K
9.5	27 9.8	39.3	
9.2	16.4	8.8	
8.8	48.0	3.8	K*b*
9.3	28 14.4	50.2	
9.5	15.0	8.2	
9.2	30.0	25.8	*a*B
9.5	45.5	49.4	B
9.2	29 17.0	59.1	*R*
9.5	34.4	56.4	
9.0	45.0	6.9	
9.2	56.2	5.0	
9.5	30 30.4	6.3	
9.0	31 1.4	50.0	K
9.5	8.9	38.4	K*b*
8.8	10.0	42.3	K
9.5	16.0	20.8	B
8.7	56.4	48.6	L
9.3	59.1	36.4	*R*
9.4	32 9.7	3.5	
7.8	26.4	29.6	K
8.3	33 5.4	23.3	K*b*
9.3	16.0	2.1	
8.7	34 1.2	50.6	K
9.5	5.6	40.0	
9.5	49.6	15.7	
9.5	55.0	47.5	
9.5	55.5	36.8	
8 7	35 8.0	8.5	K
9.5	37.1	29.2	
9.5	41.0	25.0	
9.5	36 55.0	48.3	
9.0	37 47.3	36.1	
8.0	38 1.5	55.7	K
9.3	5.2	28.5	
8.3	15.5	51.7	K
9.5	39 0.8	5.9	
9.5	11.9	15.0	
9.5	45.8	4.0	
9.5	46.0	58.4	
8.0	40 6.8	8.1	K
9.3	27.8	28.5	
8.8	41 33.6	45.8	
9.0	42 11.0	29.6	
9.2	16.9	8.6	*b*
9.5	32.0	43.1	B
9.3	36.0	35.1	B
8.5	43 50.5	5.7	K
9.5	51.9	35.0	
9.3	44 10.4	56.6	
9.5	18.0	26.0	B
6.5	45 12.4	47.4	K
9.3	24.7	30.7	
9.3	41.2	25.4	
9.5	47.0	1.6	B
9.5	59.0	29.8	B
9.3	46 17.5	53.0	
9.2	28.0	1.1	*b*
9.5	39.2	5.0	
	+	+	
10 pr.	*30.51*	*3.11*	

4581 – 4640

	22ᵐ–23ᵐ	+2°	
m	′ ″	′	
9.3	47 32.0	34.0	B
9.5	48 3.3	30.0	
9.5	7.2	43.1	
9.5	49 9.2	15.2	
9.5	12.5	19.3	
9.4	50 3.2	16.1	
8.8	16.7	27.6	
8.4	51 7.2	40.7	K
9.0	39.7	24.9	
9.0	52 9.3	47.3	
9.5	26.7	6.1	
9.0	53 16.2	24.8	K
8.8	16.7	47.9	
6.8	21.7	14.2	K
8.5	23.7	34.8	K
9.5	54 0.7	12.4	
7.5	23.7	45.9	K
8.7	55 7.8	1.3	K
9.4	22.7	30.7	
9.5	28.0	53.6	B
9.0	56 2.7	55.5	
8.5	30.7	2.8	K
7.7	40.0	30.7	K
8.7	53.7	45.1	K
9.5	57 27.5	55.8	
9.4	58 30.7	34.1	
9.5	59 30.2	27.6	
9.5	31.8	15.8	K
8.2	40.7	16.6	K
9.5	47.7	57.4	
9.4	57.7	24.8	
9.2	0 0.3	6.2	
8.7	16.0	57.9	K
8.2	39.2	47.9	K*b*
9.5	58.0	9.0	
9.5	1 1.2	22.8	
9.5	50.0	10.1	
8.7	2 14.5	59.9	K
8.5	14.7	26.9	K
9.5	31.7	36.9	
8.9	44.2	9.8	
8.5	3 2.5	43.5	K
9.5	29.7	30.7	
8.5	48.2	22.5	K
9.5	4 7.2	17.0	
9.5	17.5	55.8	
8.8	48.7	46.9	
9.3	50.0	14.0	
9.5	5 3.8	1.5	
8.6	14.5	50.0	
9.0	46.2	35.2	
9.5	50.7	9.1	
9.0	6 27.2	48.2	K
8.8	35.7	40.0	K
8.5	39.5	31.3	K
8.9	42.7	4.7	
9.3	47.5	40.6	B
9.5	7 10.7	32.3	
9.5	28.0	45.7	
8.8	34.1	4.7	K*b*
	+	+	
10 pr.	*30.57*	*3.23*	

4641 – 4700

	23ᵐ	+2°	
m	′ ″	′	
9.5	7 41.0	47.9	
9.5	51.7	12.0	
8.8	8 24.7	12.8	K
9.5	41.5	25.8	
9.5	59.5	58.5	*B*
9.0	9 2.5	26.2	
8.8	14.1	6.2	K
3.8	38.3	29.3	K
8.8	48.1	49.3	K
8.7	11 24.9	27.5	K
9.5	12 12.4	35.6	
8.8	18.9	18.4	K
9.5	13 9.4	11.4	
8.5	14 19.3	17.0	K
9.5	35.0	28.2	
9.3	39.8	48.2	
9.0	15 2.2	48.3	L*b*
8.0	22.5	57.9	K
9.5	24.3	7.9	
7.8	31.0	1.7	K
9.3	16 12.5	8.0	
9.3	14.7	54.4	K*b*
7.7	52.9	54.4	K
9.0	17 10.3	55.6	K
9.2	54.3	26.4	K*b*
9.5	18 28.0	13.7	
9.5	20 6.2	38.5	
9.5	58.8	55.4	
9.0	21 6.2	45.7	K
9.5	23 28.0	57.3	
9.3	29.8	23.4	
9.3	31.9	36.8	
9.3	54.2	29.6	
8.8	24 28.5	37.8	K
9.3	57.8	30.6	
8.8	25 5.8	14.1	L
9.3	21.2	23.8	
9.0	23.8	12.4	
9.5	27.0	27.8	B
8.3	30.5	35.1	K
9.3	58.2	17.9	
9.4	26 34.0	23.2	B
9.5	35.9	45.5	
8.5	27 3.7	29.0	K
8.8	28 29.8	25.8	K
8.0	41.8	20.4	K
9.3	29 30.8	50.5	
9.2	39.5	32.1	*B*
8.8	47.9	40.4	
8.0	30 25.5	34.4	K*b*
9.5	29.8	3.4	
9.0	54.6	24.0	
9.3	31 1.1	56.0	K
9.3	26.9	43.6	
9.0	35.0	34.8	
9.0	32 11.9	47.4	K
9.2	22.5	43.2	*B*
9.3	24.8	56.6	
9.0	39.0	3.6	
9.5	49.8	52.5	
	+	+	
10 pr.	*30.63*	*3.30*	

4499 a

9.5	*15*	*17.9*	*13.2*

4515 a

9.7	*25*	*9.0*	*2.9*	*? B*

4518 a

9.7	*26*	*11.8*	*44.9*	*B*

4701—4711					4712—4722				4723—4733				4734—4744				4745—4754			
	23ª		+2°			23ª		+2°		23ª		+2°		23ª		+2°		23ª		+2°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
8.7	33	25.9	49.5	K	9.5	40	36.5	17.2	8.3	42	26.6	3.8	*B*	8.5	49	20.0	56.1	K	9.5	54	18.3	49.4	
9.2		54.0	49.7	*a*B	9.4		53.0	39.4	9.0	43	29.4	7.9		8.5		38.0	12.4	L	9.3	55	13.0	28.7	
9.5	34	6.9	56.1		9.3		59.8	24.8	6.5	44	33.3	7.8	K	8.2		41.3	16.2	L	9.0		32.6	27.4	
9.5	35	0.0	34.0		9.2	41	6.7	56.2	9.0	45	42.5	4.4	B	8.5	50	1.0	12.2	K*b*	8.5		34.0	34.2	K
9.0	36	24.2	37.4		9.2		20.0	5.6	*a*	9.3	46	16.5	28.7	*R*	9.5		26.7	20.4		8.2	57	11.9	7.6	K
8.8	37	33.5	58.4	*B*	9.3		21.0	38.9	B	7.8		54.2	52.6	K	8.5		57.3	45.2		9.0		45.7	11.5	
9.5		40.2	5.1		8.5		33.3	22.3	K	9.3	47	31.5	30.5		9.3	51	11.7	48.0		9.4		50.0	58.4	B
9.0	38	24 5	4.7		8.7		48.5	43.5	B	8.5		55.5	26.4	K	8.8		25.7	22.2		7.7		58.0	47.4	L
6.2	39	0.5	40.8	K	9.0	42	4.7	10.7		8.0	48	9.7	42.6	K	9.3	52	12.7	38.7		9.3	59	9.3	16.0	
8.5		55.2	4.9	K*b*	9.5		8.2	16.2		8.5		34.0	44.1	K	9.5		57.0	59.7		9.5		40.0	9.6	*B*
9.3	40	30.5	20.4	*B*	9.3		23.2	49.4		9.0	49	1.0	46.9	K	8.8	53	12.3	32.2						
		+	+				+	+			+	+			+	+			+	+	
10 pr.		*30.66*	*3.32*		*10 pr.*		*30.67*	*3.33*	*10 pr.*		*30.69*	*3.33*	*10 pr.*		*30.70*	*3.34*	*10 pr.*		*30.71*	*3.34*	

Zone + 3°

1—40					41—80				81—120				121—160				161—200			
	0ª		+3°			0ª		+3°		0ª		+3°		0ª		+3°		1ª		+3°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
9.3	0	9.3	42.4		8.7	18	29.8	7.5	K*b*	9.5	31	24.1	26.8		9.5	46	24.4	19.5	B	9.0	0	16.1	37.7	
9.2		14.2	1.1	*b*	9.3		30.5	18.7	B	9.5		30.9	3.1		9.5		43.8	26.6	B	9.3		38.5	12.8	
9.5		54.8	5.7		9.5		31.8	29.0	B	9.5	32	12.9	19.1		9.5		50.3	41.3		9.2	1	29.4	8.2	
8.8	1	1.5	59.4		8.7		34.0	4.8	K	9.5		36.0	13.3		9.5	47	24.1	23.2	B	9.1	2	9.8	12.8	*a*B
9.3		4.6	39.9		9.5		34.1	38.9		9.1		54.9	4.2		9.5		29.8	41.1		8.5	3	10.0	44.6	K
9.4		5.4	15.5	B	7.4		50.0	1.3	B	8.0	33	23.4	40.8	*B*	9.3	48	0.1	4.2		8.5		58.7	39.4	K
9.0		7.4	31.4		9.0	20	17.5	24.8		9.0		30.8	57.9	K	8.7		18.6	43.1	K	9.0	4	35.5	45.6	K
9.0	2	4.8	49.3	K	8.5		19.8	48.3	K	9.3		59.4	59.5		9.5	49	10.7	54.8		9.0	5	31.6	15.2	B
9.3		10.7	47.3		9.5		40.4	18.1		9.5	34	9.9	30.3		9.5		57.3	8.7		9.5		39.3	37.5	
8.2		30.8	21.1	K	9.5	21	19.4	13.3		9.5		26.8	49.5		9.5	50	8.2	57.7		9.0		39.5	24.8	B
9.3		53.8	54.1		9.0	22	9.3	34.7	K	9.0		51.9	56.6		8.2		48.6	30.0	*B*	9.5		50.7	13.6	B
9.2		58.2	8.4		9.5		27.8	57.5		9.4		55.0	58.4	*a*	9.0		52.1	45.8		9.3		52.0	14.0	*a*B
9.2	3	9.8	57.1		9.5		41.5	57.4		7.3		55.9	22.3	L	8.0	51	14.6	25.5	*B*	9.3	6	24.5	14.2	
9.5		14.7	13.1		9.5		49.0	1.8		8.7	35	15.6	1.2	K*b*	9.5		57.2	18.6		8.8	7	9.8	0.6	
8.2		40.7	20.0	K	9.4	23	17.8	24.0		9.5		30.3	50.8		9.0	52	9.4	10.6	R	8.5		15.0	49.7	K
9.2	4	7.8	57.3	K	8.7		18.7	53.4	K	9.4		50.9	46.8	B	9.5		15.0	19.1		9.5		27.7	4.5	
9.5		13.2	1.2		8.7		26.9	5.8	K	8.7	36	53.4	19.7	B	9.5		37.3	5.2		9.5		33.3	7.3	
9.2		18.7	24.2	K	9.0		36.9	20.3		9.5	37	2.3	26.3		9.5		40.0	57.9		8.5	9	49.0	57.4	K
9.5		54.0	36.9	B	8.5	24	29.9	4.3	*L*	9.4		16.3	2.1		9.5	53	35.1	14.1		8.2		50.1	54.6	K
9.3	5	9.8	12.1		9.5		35.1	23.1		9.5		24.5	32.0	*B*	9.5		51.1	4 0		9.1		59.7	45.2	*a*B
9.5		20.1	40.5	B	9.2		43.3	20.6	*a*B*b*	9.5		31.6	15.8	B	9.5	54	11.8	56.9		9.3	10	58.0	24.9	K
9.3	6	5.3	28.6		9.5		49.0	13.0		9.5		34.0	32.5		9.5		12.2	44.7	B	8.8	11	10.7	20.8	K
9.3		24.3	13.5		9.5	25	16.9	13.7		9.4		41.4	31.3		9.4		22.8	32.2		9.5		16.5	29.5	
9.5		40.2	36.2		9.5	26	21.4	27.5		9.5	39	21.2	0.5		9.2		45.2	36.1		8.3		23.0	53.2	K
9.5	7	46.8	13.5		8.7		38.9	0.1	K	9.5		27.8	34.6		9.2		45.3	50.3		9.5	12	22.2	3 8	
7.0	8	30.2	26.5	L	9.4	27	11.4	4.4		9.5	40	39.2	0.7		9.3	55	3.4	38.9		9.5	13	8.0	19.7	
9.0		36.5	14.8		9.5		21.4	51.6		9.2		40.9	16.8	K	8.7		10.4	38.1	B	8.8	14	7.0	29.5	K
9.2	9	19.1	28.4	*a*B	9.0		27.9	35.7	*B*	8.8		53.9	20.6	K	9.5		38.0	2.0		9.5		45.0	11.0	
9.5		43.8	13.8		8.5		48.8	17.4	L	9.5	41	42.0	13.1		8.8		40.1	27.5		9.0	15	13.0	0.7	
8.7	11	34.9	49.9	K	7.8	28	3.4	29.5	K*b*	9.0	42	13.8	29.1	*B*	9.5	56	16.3	3.0		7.5		13.3	59.0	K
9.5		43.7	14.6	B	9.5		50.0	8.8		9.5		40.0	44.6		9.5		36.3	5.0	B	9.3		59.9	7.4	
9.3	12	18.9	12.3	K	9.5	29	11.7	53.2	B	9.3		58.3	46.2		9.5		45.2	40.0		8.9	16	45.7	40.8	
8.5		32.9	52.0	K	9.4		57.8	45.1		9.0	44	9.4	14.0	K*b*	9.4	57	10.0	3.3	B	9.3	17	47.3	19.1	
8.0		55.6	57.5	K	9.1	30	14.4	43.0		9.5		16.4	36.4		8.8		24.3	5.5		9.5	18	4.3	8.4	
9.5	14	52.7	35.2	B	9.5		38.1	47.9		8.0		26.9	15.8	K	8.0	58	12.6	26.2	K	9.0		34.3	41.2	K
9.5	15	22.4	58.5		8.8		38.4	35.7		9.4	45	1.9	23.7		9.5		31.8	44.2		9.3	19	12.3	37.9	
9.4		25.3	24.0		9.5		40.0	30.0		8.5		22.0	1.7		9.3		34.5	2.7		9.5		21.0	35.7	
9.5	16	12.0	8.3		9.2		44.9	11.6	K*b*	9.3		24.9	14.0		9.0	59	12.1	32.0		9.0		30.3	25.0	
9.5	18	1.3	52.9	B	9.3		48.3	45.9	B	9.1		44.6	57.7		8.5		21.9	2.3	K	8.2		46.8	2.9	K
9.4		4.2	57.8	B	9.5	31	15.8	34.0		7.3		51.6	18.1	P	9.5		42.1	54.2		9.0		58.9	42.2	
*		+	+				+	+			+	+			+	+			+	+	
10 pr.		*30.70*	*3.34*		*10 pr.*		*30.77*	*3.32*	*10 pr.*		*30.85*	*3.30*	*10 pr.*		*30.91*	*3.25*	*10 pr.*		*30.97*	*3.18*	

40ª				
9.6	*18*	*17.0*	*22.3*	*B*

1ᵘ — 3ᵘ **+3°**

201—260					261—320					321—380					381—440					441—500				
	1ᵘ		+3°			1ᵘ—2ᵘ		+3°			2ᵘ		+3°			2ᵘ—3ᵘ		+3°			3ᵘ		+3°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
8.7	20	3.4	7.7	*Kb*	9.5	46	58.8	7.3	B	8.8	10	58.0	43.0	K	8.8	39	0.6	27.4	B	9,2	5	18.6	3.2	K
9.5		4.3	52.7		9.5	47	12.3	3.8		9.3	11	5.3	51.5		9.3		27.0	18.1		9.5		19.2	31.3	
9.5		29.0	47.4		9.0		22.6	4.0		8.0		8.3	31.3	K	9.5		33.0	39.2		9.5		36.2	16.4	
9.5		57.0	16.0		9.5	48	37.3	26.7		9.0		46.7	32.0		9.3	40	22.3	48.3		9.5		55.8	37.0	
8.3	21	39.4	3.2	*B*	9.5		41.8	54.4		9.5	12	4.7	9.5		9.2		23.8	8.4	*b*	8.8		55.8	6.1	*Kb*
9.2	22	56.0	13.6	K	9.3		55.8	10.8		9.5		16.0	35.1		9.5	41	3.7	34.0		9.5	7	10.9	4.0	
9.1	23	4.4	56.2	*aB*	9.5	49	26.8	59.2		8.3	15	29.0	8.1		8.0		24.3	28.8	K	8.6		20.7	45.5	*Kb*
9.0		18.0	4.1	K	9.5	50	4.0	22.4	B	9.5		48.3	20.5		9.0		57.5	57.1		9.5		33.0	52.7	
9.5		23.3	47.8	R	9.0		45.3	20.2		9.3		58.0	32.7		9.3	42	2.6	12.8		9.5		56.3	30.2	K
9.5	24	21.0	7.8		9.3	52	5.9	13.8		9.0	16	40.4	16.7		9.5		12.7	11.9		9.0	9	24.9	47.0	K
9.5		22.0	43.0		9.1		15.2	49.8	*aB*	8.8	17	3.0	25.0		8.5	43	16.7	12.6	K	8.2	10	11.3	9.1	K
8.5	25	1.0	30.2	K	8.3		16.3	52.8	K	9.5		14.9	56 3		9.3		23.0	52.4		9.5		30.9	45.3	
9.0		10.3	19.5	K	7.5		48.7	42.3	K	9.4		44.1	28.6		8.3		36.0	51.6	K	8.8		38.3	8.7	K
9.3	26	11.3	56.8		9.0	54	7.2	21.6	K	9.5		47.0	58.3		9.5		42.0	18.5		9.5	11	9.4	30.7	
8.2		14.4	1.0	*B*	9.5		34.6	15.0		9.3	18	5.7	32.0		9.2		47.8	49.0	K	9.3		10.3	8.1	
8.5		32.7	22.6	K	9.5		50.6	52.0		9.3		9.3	16.4	B	9.5	44	4.3	7.9		8.8		14.8	40.8	K
9.0		39.5	19.8	K	8.8	55	8.4	8.5	*Kb*	9.4		12.1	24.6	B	8.8		40.0	44.1	K	9.5		31.1	5.4	
7.8	28	45.3	34.3	*Kb*	8.8	56	16.1	29.2		8.9		16.0	25.0	K	9.0		40.3	16.0	K	9.4	12	20.5	28.1	B
8.3		56.0	2.5	K	9.0		26.1	23.7	R	8.5	20	10.0	45.5	K	9.0	45	2.3	0.8	K	9.2		32.7	42.5	
9.5	29	43.3	44.8		9.5		53.1	27.5		9.0		16.7	46.5	K	9.5		6.8	32.0		9.5	13	8.3	27.9	B
9.0	30	11.7	19.0		9.0	57	1.0	59.8		8.8		56.7	56.5	K	9.5		21.0	4.9		6.3		33.8	9.2	K
9.0		32.0	22.0	K	9.5	58	47.2	20.9		9.0	21	2.0	34.4		9.5	46	4.0	20.9		8.8		39.0	20.2	K
8.8	31	25.5	23.3	*Kb*	9.0		58.7	38.9		9.0		29.0	15.0		9.3		14.3	22.3		9.5		43.2	37.4	
9.5		54.7	54.7		8.5	59	15.1	12.6	K	9.5		47.4	48.3		9.5		20.8	53.5		8.0	14	29.8	41.5	K
9.5	32	20.0	38.8	R	9.3		29.6	4.7		9.0	22	8.0	47.9		8.8		34.3	21.2	K	9.5	15	3.9	46.4	
9.5	33	11.0	6.8		9.0	0	43.2	32.7		8.2		33.2	57.2		9.3	48	23.7	30.6		9.5		45.8	14.4	
9.5		31.5	10.6		9.3	1	31.7	32.3		9.3		53.0	15.7		8.2		40.0	26.1	K	9.5	16	21.2	30.6	*n*
9.5		45.6	29.1		7.5	2	7.0	33.3	K	8.8	24	10.7	36.1	K	9.0		48.7	52.1		9.5		51.2	30.6	
9.0		48.2	45.4	K	7.1		21.1	4.3	K	9.5		22.4	55.3		9.5		59.0	14.0		9.0		51.7	20.3	K
8.5	34	24.2	56.4	K	9.4		45.1	3.1		9.3		26.7	11.5		6.8	49	30.2	54.5	*Kb*	9.5	17	36.1	22.4	
8.8		40.4	42.6	K	9.5		59.1	32.0		8.0	25	7.0	5.6	*Kb*	7.8		37.0	5.4	K	9.5	18	16.7	3.4	
9.1	35	45.7	1.9		9.5	3	5.0	26.8		9.3		34.3	39.6		9.0	50	15.7	28.1		9.2		52.1	33.3	
9.5		50.3	17.0		8.8		19.7	18.1		9.0		45.7	46.8		9.5		35.7	46.9		9.5	19	6.6	12.8	B
9.5	37	1.4	57.3		9.3		22.7	58.9		8.7	26	13.2	7.9	K	9.2		37.0	14.7	K	9.5		29.0	57.3	
9.5		25.8	23.7		9.0		35.0	35.5		9.5		21.5	32.2		9.3	51	32.3	25.7		9.0		57.3	37.7	
9.5		37.8	41.6		9.5		43.2	54.9		9.5		36.5	33.6		9.5		44.3	31.0		9.0	20	7.4	37.4	
9.0	38	24.3	27.4		9.5		54.3	26.6		9.3	27	5.6	4.7		9.5	52	8.0	31.6		9.1		18.9	53.1	
9.5		27.8	10.8		9.5	4	2.7	14.7		9.4		12.4	26.9		9.3	54	24.2	13.4		8.7		23.0	24.3	K
9.0	39	8.6	49.2	K	9.5		7.1	21.5		8.0		35.6	28.9	K	2.5		43.8	31.1	K	8.7		35.4	39.6	K
9.5		39.9	12.2		8.5		23.8	54.5	K	9.0		57.7	28.9	K	7.3		47.7	46.5	K	9.5		38.9	40.2	K
9.2		40.9	6.6		9.1		24.7	41.3	K	8.8	28	13.7	47.2	*Kb*	9.1		48.4	23.7		8.2	21	7.5	51.9	K
9.0		51.3	10.5	K	9.0		35.8	35.3		9.5		20.3	1.4		8.8	55	11.7	3.3	K	9.5	22	7.3	26.0	
9.0		57.7	59.4	*Kb*	9.0	5	10.7	42.0		9.5	29	27.0	28.8		9.0		25.4	21.3	K	9.5		48.9	38.0	
9.1	40	32.7	31.7	*aB*	9.5		22.2	55.2		9.3		47.7	25.4		9.5	56	15.9	5.0		9.3	23	2.5	26.0	
9.2	41	4.2	6.4	*Kb*	8.3		29.7	36.5	K	8.8	30	19.3	32.0		9.5	57	0.0	33.7		9.5		25.5	33.8	
9.4	42	7.9	39.6	B	9.0		54.1	31.6	K	9.5		55.0	26.1		8.9		26.8	53.8	K	8.3	24	37.0	23.3	K
9.5		58.8	26.7		8.5	6	9.8	51.5	K	9.0	31	7.7	43.4	*Kb*	9.0		30.9	25.5		9.5		45.8	58.3	
9.3	43	21.8	48.1		9.5		15.0	8.2		9.0		34.8	1.5	K	9.5		39.2	59.4		9.0		49.0	54.5	
8.5		29.1	28.8	*Kb*	9.0		36.7	27.8		9.5		35.7	34.4		9.2		43.9	12.5	*Kb*	9.5	25	0.9	26.3	
8.8	44	7.8	25.0	K	8.3	7	36.2	10.8	*Kb*	8.8		41.2	5.3	K	9.2	58	18.7	29.5		9.0		37.4	38.5	K
9.3		9.8	27.4	*aB*	9.5		55.7	26.8		8.8	32	13.7	47.2	K	8.0		48.5	14.4	K	9.2	26	23.9	30.2	
9.5		9.8	20.2		9.5	8	21.7	45.8		9.0	33	40.3	14.0		9.0	59	6.6	38.1	K	9.2		38.1	42.6	K
9.3		35.0	10.9		8.0		52.2	57.0	K	7.2		47.0	47.6	K	8.9	2	3.3	50.0	K	9.2		41.1	29.3	
9.3		42.5	4.0		9.5		52.3	35.5		9.5	34	36.7	26.1		8.9		50.8	42.0	L	9.5	27	16.7	33.8	
9.5		53.0	49.5		8.5		58.0	16.4	K	9.5		37.7	46.1		9.5	4	22.2	26.7		9.0		52.9	1.8	K
8.8		56.6	3.8		9.5	9	31.0	17.4		9.3	35	12.3	25.8		9.2		34.2	10.9	K	9.2		57.9	26.2	K
8.5	45	15.0	56.1	K	8.7		38.3	50.3	*Kb*	9.0	36	15.3	35.5		9.5		35.8	57.2		9.5	28	11.1	45.2	
9.5		46.3	39.1		9.5		40.7	21.0		9.5	37	35.3	16.8		9.3		51.8	24.9		9.5		47.1	27.8	B
9.0	46	25.3	18.5		9.5	10	25.7	42.7		9.3	38	46.8	23.7	B	9.3	5	1.4	25.2		9.4		58.0	11.0	
8.7		43.0	52.3	K	9.3		49.7	29.5		9.5		58.0	53.1		9.0		14.7	41.7		8.5	29	10.6	59.9	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		*31.05*	*3.06*		*10pr.*		*31.14*	*2.87*		*10pr.*		*31.21*	*2.70*		*10pr.*		*31.27*	*2.46*		*10pr.*		*31.34*	*2.16*	

m	3ª ′ ″	+3° ′	
9.0	29 34.4	31.8	
9.5	56.0	12.5	
7.4	30 13.9	40.8	K
9.0	58.6	36.3	K
9.5	31 7.9	32.3	
8.9	26.9	4.2	K
8.6	50.3	4.7	K
9.0	53.9	19.2	K
9.5	32 2.9	57.2	
9.2	33 11.4	53.0	K
8.5	11.5	51.9	K
9.0	23.0	6.3	
9.2	25.5	14.9	a
8.8	32.7	42.4	K
9.0	33.7	9.0	
9.2	34 56.5	40.5	a
8.5	35 15.8	40.1	K
9.3	20.4	47.8	
8.8	36 3.6	45.3	K
9.0	28.2	7.1	K
9.5	34.2	14.0	
9.5	58.7	7.1	
8.5	37 40.5	58.6	K
9.5	38 50.8	17.2	
9.5	40 5.8	40.7	
9.5	41 21.4	38.7	
9.5	42 3.9	16.6	
9.3	17.7	38.5	b
9.5	22.0	5.7	
9.5	43 16.1	59.2	
9.5	54.6	10.8	B
9.5	55.5	16.5	B
9.5	44 7.4	45.7	
9.5	49.0	24.8	
9.5	45 56.8	36.8	
9.3	47 11.9	32.1	B
9.5	21.3	9.8	
9.0	38.0	52.1	
8.8	48 19.9	38.9	K
8.7	58.6	39.2	K
9.4	49 28.1	48.7	B
9.2	36.9	52.3	K
9.3	47.0	4.5	
9.5	50 38.4	45.2	
8.5	51 7.0	6.1	K
8.3	52.2	21.9	Kb
9.0	52 2.0	0.7	K
9.5	53 14.7	21.5	
9.5	54 12.0	54.3	
9.4	17.7	58.6	
9.3	37.6	33.6	
7.7	53.4	25.8	K
9.4	56 7.2	16.7	B
8.7	26.0	26.8	K
9.5	30.5	41.6	B
9.5	49.5	58.7	
9.0	58 3.6	17.2	
9.5	54.8	36.4	
9.3	58.3	23.2	
9.0	59 6.2	13.6	
	+	+	
10pr.	31.40	1.88	

501 — 560

m	3ª — 4ª ′ ″	+3° ′	
9.5	59 27.0	56.2	
9.2	0 5.7	55.9	K
8.6	15.8	54.2	K
9.3	2 14.1	56.4	R
9.5	51.5	2.4	
9.5	3 14.9	12.5	
9.5	4 11.1	34.8	
9.5	17.9	39.6	
9.5	50.7	59.7	
9.5	5 13.9	5.0	
9.0	41.4	43.3	
8.7	47.5	32.0	K
9.5	6 58.4	24.6	
8.5	7 12.6	0.1	K
8.5	31.8	35.4	K
8.2	49.3	38.9	K
9.5	56.0	1.1	
9.0	8 2.8	36.7	
9.0	9 2.6	8.8	
9.3	3.9	19.9	
9.5	15.2	16.7	
9.2	26.0	47.2	b
9.5	36.6	2.0	
8.9	10 25.6	9.7	K
9.0	11 13.4	53.1	K
9.3	28.5	11.8	
9.5	12 10.7	32.2	
9.5	59.5	21.9	
9.0	13 4.1	55.4	
8.8	14.8	32.8	
9.4	52.1	48.6	B
8.2	14 3.9	36.1	L
9.2	9.6	16.8	
9.2	44.8	1.3	
8.6	55.2	4.0	Kb
8.5	15 30.9	38.6	K
9.3	57.7	39.4	
9.5	16 18.1	19.9	
9.3	44.3	23.1	
9.5	46.7	34.7	
9.3	53.3	46.8	
9.1	19 6.5	8.7	
8.9	25.2	57.0	K
9.0	41.9	9.6	
9.0	20 15.9	14.1	
9.5	49.0	49.7	
9.5	21 0.1	56.6	
9.5	12.7	44.4	
9.5	56.6	31.0	
9.5	22 10.1	48.1	
9.2	26.7	10.6	b
8.8	23 18.1	9.7	K
9.5	59.0	21.0	
8.7	24 7.4	0.8	K
9.5	44.5	55.2	
9.3	25 47.5	15.1	
8.9	26 10.0	8.4	K
8.8	17.2	31.5	
8.0	37.6	27.2	Kb
9.3	55.0	22.8	
	+	+	
10pr.	31.45	1.49	

561 — 620

m	4ª ′ ″	+3° ′	
9.3	26 58.7	37.0	
9.3	28 12.5	59.8	
8.5	21.4	46.2	K
9.3	30.1	6.6	
9.3	46.0	54.4	
8.5	29 6.4	13.9	K
9.5	7.1	50.0	
9.5	31.2	51.2	
9.0	37.6	33.1	
9.3	37.8	47.2	B
9.0	30 56.7	58.4	
9.5	31 30.6	42.0	
9.5	52.7	46.5	
9.5	32 1.2	55.3	
9.0	6.5	5.2	K
9.3	21.5	16.2	B
9.5	25.2	52.0	
8.8	31.6	2.4	Kb
9.5	33 9.1	24.4	K
8.5	30.3	14.2	
9.4	31.0	4.3	
9.5	40.6	1.1	
8.5	44.1	22.7	K
8.7	34 38.9	31.4	Kb
8.8	46.3	46.8	K
9.5	35 18.3	35.5	
9.5	37.0	19.8	
9.3	54.4	29.5	
9.4	59.4	55.7	
9.3	36 0.1	52.0	
9.5	11.0	41.8	
8.7	12.3	12.0	Kb
9.3	16.1	36.2	
9.5	23.5	9.1	
9.5	42.2	10.0	
9.3	50.2	43.8	B
9.3	52.7	43.0	B
8.5	37 4.6	43.4	B
9.5	20.2	53.6	
9.5	23.8	59.8	
9.5	40.7	58.3	
9.3	52.0	15.4	
9.2	38 27.9	41.2	
8.1	42.6	1.5	L
8.7	47.2	46.2	K
9.0	53.9	42.2	K
9.5	58.2	14.0	
9.5	39 24.1	24.6	
9.5	28.5	2.3	
9.3	47.3	38.7	
9.5	48.8	34.7	
9.0	59.2	52.4	
9.4	40 4.0	34.1	
9.3	27.5	28.2	
9.5	32.4	57.7	
9.5	43.0	1.2	
9.5	48.0	5.5	aK
9.5	41 1.5	47.5	
8.4	5.3	23.5	K
9.2	7.2	42.5	
	+	+	
10pr.	31.48	1.19	

621 — 680

m	4ª ′ ″	+3° ′	
7.0	41 9.5	19.6	K
7.9	20.7	26.0	K
9.1	23.6	55.8	b
8.7	40.0	1.0	K
9.5	42 25.1	4.2	
8.2	37.3	26.4	K
8.7	43 34.9	42.9	K
8.7	35.9	36.6	
9.5	40.7	19.5	B
9.5	50.6	25.0	
8.8	54.4	56.1	K
9.3	44 1.5	15.5	
9.5	5.9	59.9	
9.3	21.2	23.9	
9.5	27.4	1.7	
9.3	33.7	1.7	
9.5	45 0.4	36.7	
9.3	19.3	36.5	
9.5	24.5	17.8	B
9.5	37.4	54.7	
9.0	45.5	11.7	K
9.5	54.7	18.7	
9.4	46 4.9	25.9	B
9.5	18.3	27.5	B
9.2	24.5	55.5	b
9.3	37.8	13.4	
9.3	48.6	57.5	
9.5	49.7	26.1	
9.3	47 37.5	33.4	
9.3	46.4	30.4	
9.3	48 11.3	5.3	
9.2	13.6	32.8	b
9.5	48.2	27.7	
8.8	49.0	43.7	
9.5	58.1	35.7	
8.3	49 24.3	3.4	K
9.5	27.4	45.0	
9.5	34.1	24.6	
9.3	37.3	32.5	
9.5	58.9	13.6	
9.0	50 2.2	21.9	
9.1	5.4	50.7	"
9.0	6.5	44.7	
9.5	6.6	25.6	
9.5	11.8	15.0	
9.5	13.5	20.0	
9.0	15.4	49.2	
9.3	18.0	20.9	
9.5	36.5	14.9	B
8.8	36.7	54.5	K
9.5	51 13.0	5.8	
8.8	52 16.4	57.7	
8.5	33.2	4.3	K
9.0	38.2	28.2	
9.2	43.4	44.2	
7.8	55.2	23.8	K
7.8	56.2	23.8	K
8.2	53 2.7	4.2	S
8.2	29.6	30.7	K
9.5	33.1	53.6	
	+	+	
10pr.	31.50	1.03	

681 — 740

m	4ª — 5ª ′ ″	+3° ′	
8.8	53 48.7	17.2	K
8.9	54 15.8	39.6	
8.9	29.0	37.4	
9.3	33.9	3.1	
9.3	39.0	49.9	
9.4	48.1	14.8	K
9.3	52.8	14.3	K
8.2	55 8.2	14.9	K
9.5	40.4	33.9	
8.9	40.9	49.4	K
9.3	50.9	38.7	
9.2	54.6	28.1	
9.0	56 18.6	6.6	
9.3	36.4	38.1	
9.0	42.1	15.3	
8.8	49.4	50.3	
9.5	56.1	51.0	
8.5	57 8.0	22.4	K
8.8	34.3	2.5	K
9.3	54.0	37.7	
9.5	54.8	6.8	
8.8	57.0	58.0	B
9.3	58 1.3	15.8	
9.4	14.9	50.3	nB
9.3	17.4	19.5	
var	24.7	54.1	B
7.9	28.9	35.5	K
9.0	46.7	50.4	K
9.5	59 8.0	44.4	
9.3	12.4	25.3	
9.5	33.3	58.8	
9.3	0 8.4	20.1	
9.3	9.4	23.9	
9.5	15.8	28.4	
9.5	18.6	3.9	
9.5	25.2	6.8	
8.0	29.1	33.3	Kb
9.5	37.5	28.3	
9.5	41.4	33.1	
9.3	51.6	5.9	B
8.9	55.8	34.7	K
9.4	1 3.3	43.4	
9.5	3.7	30.0	
9.5	9.2	53.0	
7.0	20.5	2.3	L
9.5	26.2	9.5	
9.5	33.4	9.2	
9.2	36.2	36.7	
9.2	42.3	17.0	
9.0	52.4	41.1	K
9.5	2 18.1	24.4	
9.5	31.4	3.3	
9.5	42.1	15.2	
9.3	53.6	51.3	
9.3	3 0.8	49.1	
9.2	5.1	27.0	b
9.5	22.6	33.0	
9.5	37.4	42.3	
9.5	44.2	23.4	
9.5	52.1	9.9	
	+	+	
10pr.	31.51	0.88	

741 — 800

5° +3°

801—860				861—920				921—980				981—1040				1041—1100			
	5ᵐ	+3°			5ᵐ	+3°			5ᵐ	+3°			5ᵐ	+3°			5ᵐ	+3°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.0	4 14.1	35.9		9.5	14 8.6	43.5		9.4	21 21.6	14.2		9.1	28 53.1	13.1		7.5	40 36.3	51.4	*B*
9.5	28.8	40.5		9.5	13.7	47.9		9.3	21.7	45.6		9.5	55.8	17.9		9.5	41 14.8	42.0	
9.5	29.0	4.0		9.1	24.4	10.1	B	9.3	33.1	26.9	*a*	9.0	29 14.8	55.7		8.9	25.1	57.9	
9.4	33.4	8.7		8.0	28.1	25.4	L	9.5	40.0	22.2		9.5	31.4	30.7		9.0	30.4	14.7	
9.5	38.0	6.3		9.4	32.1	9.7	*a*	9.4	46.8	36.3		9.5	35.1	54.6		8.4	31.9	36.1	
9.3	56.8	46.6	B	8.9	35.5	4.5	K	9.2	47.3	56.6	*a*B	9.0	45.8	27.7		9.5	53.5	39.5	
9.4	5 13.0	50.8	B	9.3	38.9	15.1	B	9.5	52.0	43.9		9.5	50.2	49.0		9.5	42 1.3	50.5	
9.5	21.0	6.3		9.5	41.4	17.0		7.8	58.4	1.2	K	9.0	30 13.7	14.2	K	8.5	29.0	12.7	K
9.5	21.1	16.4		9.5	54.0	23.0		9.5	59.0	37.2		9.5	39.4	21.5		9.5	37.5	59.9	
9.5	33.8	36.5		8.8	15 8.8	41.3	K	8.9	59.1	48.2	K	9.5	41.8	28.5		9.2	38.2	18.2	
9.5	38.7	53.7		5.3	13.8	24.0	K	9.5	22 14.5	20.0		9.5	43.1	40.8		8.2	50.2	9.2	K
8.5	47.2	30.5	K	7.5	15.0	24.7	K	9.0	20.3	26.9	K	8.8	49.8	59.1	K	9.3	43 6.3	34.6	
9.2	59.7	32.3	K	8.5	25.7	3.4	K	9.2	27.8	25.5	*a*	9.5	55.6	37.0		9.3	11.4	46.9	
9.4	6 2.0	58.7	B	9.5	29.2	44.3		9.4	29.1	42.2		9.5	31 5.9	40.8	B	9.5	12.6	26.2	
9.0	3.8	17.0		9.5	50.6	57.1		9.2	35.4	37.8		9.5	33.1	43.1		8.9	29.3	27.6	
9.2	6.4	24.5	*B*	9.5	51.8	38.4		9.1	43.2	9.3		9.5	43.1	52.9		9.5	33.3	24.4	
9.2	11.7	31.0		9.3	16 4.8	2.4		9.4	50.1	42.5		9.0	48.1	20.2	K*b*	9.2	36.0	52.7	
9.0	16.0	4.4		9.5	35.0	22.7		9.3	51.6	51.8		9.5	32 10.1	35.9		8.5	49.3	43.9	K*b*
9.2	20.2	59.9	K	9.5	53.1	29.8		8.9	55.3	37.4		9.5	11.8	38.8		9.3	44 26.7	47.2	
9.0	26.3	1.5		8.5	55.5	22.8	K	9.0	23 9.3	24.8	K	9.5	24.1	11.1		9.5	38.5	4.0	
9.3	31.8	2.4		9.5	17 2.2	34.0		9.3	11.1	6.8		9.0	31.1	35.8	K	8.6	51.1	40.8	K
9.5	42.0	6.4		9.3	10.8	58.2	*a*	9.5	19.0	38.6		9.5	59.2	9.4		9.5	54.1	58.5	
9.5	43.8	53.1		9.1	18.8	58.1	K	9.5	21.6	27.5		9.3	33 7.3	45.5		9.5	45 5.0	18.2	
9.3	7 12.8	25.5		9.5	21.2	33.2		9.0	28.7	14.5	K	9.5	13.7	25.5		9.5	13.7	48.8	
9.2	23.8	19.7	K	9.5	25.0	4.3		9.1	31.6	30.8		9.5	24.2	4.3		8.3	22.1	0.9	K
9.0	26.6	40.7		9.5	30.3	43.4		9.5	33.3	1.8		9.0	36.4	1.6		9.5	37.5	20.2	
8.5	8 14.1	35.1		9.5	40.0	23.3		9.5	37.6	29.5	K	7.3	48.0	42.1	K	9.5	46.5	4.1	
9.5	15.2	55.1		9.5	47.4	42.2		6.5	38.1	10.9	K	9.0	34 25.5	52.8	K	9.5	53.0	59.7	
9.2	24.1	48.7		9.3	18 1.8	41.0		9.5	42.8	29.1		9.5	34.5	25.0		9.2	46 19.3	6.3	
8.9	37.8	19.4		9.3	5.3	34.8		9.5	24 10.1	27.0		9.2	39.1	35.9	*a*	9.5	29.0	15.3	
9.5	50.2	41.1		9.0	18.3	41.1		9.5	19.3	0.3		9.4	45.1	11.0		6.3	38.5	12.1	K
8.7	53.6	2.9	K	9.5	20.0	0.3	B	9.2	23.0	1.9	*a*B	9.3	58.8	50.7		9.0	44.9	37.5	
9.5	59.1	12.6		9.4	21.1	19.0		9.5	25.4	11.7		8.8	59.1	36.5		9.5	47 24.6	48.6	
9.5	9 7.0	30.7		9.5	23.0	41.7		9.4	33.1	18.0		8.6	35 15.7	30.2		9.5	34.7	37.3	
9.5	22.1	30.0		9.3	32.4	43.0		9.3	55.1	20.8		9.3	31.1	59.7		9.5	58.8	32.0	
8.6	22.3	18.8	K	9.2	36.2	0.2	B	9.5	25 20.3	18.9		9.5	42.0	56.8		9.5	48 28.0	55.3	
9.5	33.1	33.7		9.4	36.2	7.2		9.5	29.7	36.0		9.3	53.5	29.3		8.3	35.0	50.4	K
9.5	10 5.7	49.3		8.0	44.1	42.6	K	8.1	33.2	1.8	K	8.3	36 3.8	56.3	K*b*	9.1	47.0	53.2	
9.5	24.1	55.5		7.8	19 6.4	56.7	K	9.5	38.4	59.4	B	9.3	28.3	16.3		9.5	49 10.5	25.2	
9.5	26.1	37.6		9.3	8.6	55.4	K	9.5	41.6	59.7	B	9.5	54.5	17.3		8.5	50.5	30.6	
8.9	26.4	32.0	K	8.0	16.8	29.1	K	9.5	26 12.4	58.5		9.5	58.4	8.5		9.5	55.3	56.6	
9.0	32.2	8.6		9.5	22.7	24.0		9.3	24.8	47.7		7.8	37 4.5	45.7	K	9.5	58.0	12.0	
9.5	53.7	39.0		7.2	28.0	42.5	K	9.3	35.0	35.9	K	8.5	7.8	7.5	K	9.5	50 9.1	47.1	
9.5	11 1.6	13.2		9.3	29.1	34.2		6.2	39.8	39.8	K	9.4	14.7	8.1		9.5	9.4	4.6	
9.0	2.8	49.2		9.0	39.8	42.3	K	8.8	46.4	28.1	K	7.0	22.5	56.4	K	9.5	21.5	54.5	
9.5	15.0	9.1		9.5	40.6	14.6		9.3	51.1	58.8		9.3	52.5	4.3		9.5	38.0	24.7	
9.5	38.6	20.8		9.5	20 2.2	50.8		9.4	27 9.9	22.6	B	9.3	58.8	46.4		9.5	58.0	57.1	
9.5	49.2	41.7	B	9.2	18.1	54.7		9.5	10.8	41.1	B	9.5	38 32.8	43.1		9.5	51 31.0	49.3	
9.3	56.8	42.9	*B*	9.5	25.2	6.9		9.1	13.6	38.6	K	9.5	39.8	40.2		9.5	47.1	1.9	
9.5	12 13.8	23.3		8.0	29.6	24.3	K	9.5	26.1	13.8		9.5	47.8	23.6		9.0	52 4.5	5.4	
9.5	20.1	23.7		9.3	30.4	47.9		9.4	32.8	6.8		9.5	39 0.0	11.4		9.5	11.5	8.2	*a*
9.3	20.1	14.5		9.2	32.5	29.5	K	9.3	35.1	39.6		9.5	19.2	6.5		9.5	13.0	14.5	
8.9	34.1	54.7	K	9.3	37.4	28.1	*a*	9.1	49.1	49.4		9.5	25.3	25.8		8.0	14.7	58.6	B
9.4	35.5	0.1		*9.5	42.7	53.5		9.3	28 20.4	43.2		9.5	51.5	49.0		9.0	27.0	56.1	
9.1	51.3	21.0	*b*	9.5	50.7	23.7		9.2	22.5	1.8	*b*	9.5	55.0	42.9		8.8	36.8	27.4	
9.3	13 20.8	26.3		9.0	53.8	32.4	K	9.3	25.4	57.9		8.5	56.4	34.7		9.5	46.6	24.2	
7.3	41.1	51.1	K	9.3	58.1	31.4		9.5	31.3	2.5		8.9	40 3.6	5.0	B	9.5	53 0.6	8.0	
9.0	48.7	39.2		9.0	21 9.3	4.5	K*b*	9.3	32.4	24.4		9.0	20.0	54.0		9.4	20.6	8.6	
9.0	56.6	1.7	K	9.3	16.1	38.8		9.2	34.0	9.0		9.3	21.5	33.5		9.5	27.0	21.4	
9.5	14 5.2	23.8		8.8	20.2	30.7	K	9.3	49.4	23.5		9.5	28.1	22.9		9.5	36.4	40.5	
	+	+			+	+			+	+			+	+			+	+	
10 pr.	*31.51*	*0.74*		*10 pr.*	*31.52*	*0.61*		*10 pr.*	*31.52*	*0.52*		*10 pr.*	*31.53*	*0.36*		*10 pr.*	*31.53*	*0.19*	

913 a

9.5	*20*	*41*	*28.7*	*a*

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5ᵐ–6ᵐ		+3°			6ᵐ		+3°			6ᵐ		+3°			6ᵐ		+3°			6ᵐ		+3°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	53	40.0	5.6			9.5	4	58.7	43.6		7.5	15	41.5	50.1	K	9.5	24	24.5	9.6		9.5	31	54.0	40.8	
9.5		44.7	26.6			9.4	5	19.8	16.8		9.5		45.5	1.2		9.5		26.0	4.4	*a*	9.2		55.4	26.7	
9.5		49.6	19.8			9.4		22.0	11.2		9.4	16	10.4	22.3		9.4		41.3	34.7		9.4	32	1.9	1.1	
7.6		54.7	10.6	K*b*		7.8		27.4	32.4	K	9.5		11.1	45.9		9.3		42.0	28.0		9.3		2.1	14.8	
9.4		55.3	10.1			9.4		39.6	10.3		9.4		14.8	19.0		9.0		44.6	20.4		9.5		6.7	40.8	
9.0	54	12.5	18.2			9.1		51.6	19.8	*b*	9.4		15.1	13.4	B	9.3		44.9	35.2	B	9.2		36.2	30.9	
9.5		15.7	32.7			9.5	6	14.1	13.5		9.5		22.3	35.8	B	9.1		47.2	40.9	K*b*	9.5		41.1	4.2	
8.7		29.3	7.4	K		9.5		27.7	48.5		9.5		33.7	35.6	B	9.5		56.6	2.3	*a*	8.1		41.2	40.5	
9.5		34.5	27.2			9.5		32.0	52.2		9.2		34.3	9.3	K	9.5	25	2.0	18.5		9.3		53.9	48.8	
9.5		54.5	41.3			8.0		34.3	56.3	K	9.3		40.2	47.8		7.9		4.6	54.8	K	9.2		54.5	36.9	αB
9.4	55	16.7	38.0			9.5		38.5	37.2		9.5		42.2	47.1		9.3		5.4	11.0		9.3		55.9	36.4	
7.6		47.6	51.8	K		9.5		44.6	49.9		9.5	17	2.3	21.7		9.4		8.9	11.2		8.3	33	1.8	30.0	
9.5		55.3	14.5			9 5		53.0	26.6		8.8		8.0	50.5	K	9.5		10.2	23.9		9.5		14.9	9.9	
9.5		59.7	22.1			8.8		56.5	32.0		9.5		24.3	37.3		9.2		16.2	35.5		9.4		31.6	35.4	*a*
9.5	56	1.0	37.7			9.3	7	7.3	5.1		9.4		37.3	49.5	B	9.3		16.4	51.4		9.5		34.0	32.8	
9.5		4.5	41.8			9.5		19.6	30.9		9.5		40.0	28.0		9.3		44.0	29.8		9.3		57.1	14.0	
9.3		4.8	5.6			8.6		21.5	50.3	K*b*	8.9		40.2	4.8		9.3		54.2	53.6		9.4	34	9.3	1.9	
9.2		41.5	32.4	*b*		8.7		28.0	55.5	K	9.0		41.6	55.1	K	9.5		56.7	12.4		9.5		9.3	14.6	
9.3	57	26.2	23.2			9.3		34.8	50.0	*a*	9.5	18	3.8	0.7	B	9.5	26	8.6	18.5		7.3		27.8	23.1	K
9.5		52.7	34.6			7.7		52.0	59.9	K	9.5		15.5	19.3		9.5		9.3	2.1		9.4		40.2	32.5	
9.3	58	5.7	47.3			9.1		57.9	34.4		9.4		19.0	2.5		9.5		31.6	35.0		9.5		40.5	56.5	B
9.5		33.1	54.9			8.4	8	14.6	28.5		9.5		39.5	1.2		9.5		33.4	48.0		8.0		46.3	0.7	L
8.5		37.0	20.7	K		9.5		19.1	53.5		9.5		41.6	12.0		7.5		33.4	0.6	L	9.5		47.0	7.1	
9.0		51.3	6.9			9.3		28.0	5.2		9.2		47.1	15.8		7.7		45.1	25.0	L*b*	9.5		47.5	13.0	
9.5	59	2.5	44.1			8.3		28.9	8.4	K	9.4		59.4	52.2		9.5		49.0	8.4		8.7	35	4.4	18.5	K
9.5		3.1	32.0			9.5		40.5	52.9		9.0		59.4	41.3		9.3		59.5	52.4		9.5		5.5	22.6	
8.8		22.1	21.6	K		9.0		56.4	9.5		8.8	19	2.4	30.2		8.7	27	5.3	11.0	L	9.5		14.3	51.9	
8.0		47.9	7.2	K		9.5	9	16.1	46.2		9.1		4.4	57.1	αB	9.3		15.3	56.0		9.3		23.4	30.8	
9.5		52.1	36.5			9.5		21.3	18.8		9.5		6.8	28.3	*a*	9.5		16.8	8.1		9.5		25.0	58.9	
9.5		55.1	59.8			9.2	10	5.2	58.3		8.7		9.7	14.5		9.5		35.5	47.2		9.3		28.6	48.4	
8.5	0	28.1	18.2	K		9.3		11.4	5.1		8.5		26.7	27.6		9.5		42.5	22.8		7.0		30.9	10.3	K
9.5		39.1	58.1			9.0		19.3	2.6		9.4		32.5	28.2	B	9.0	28	13.2	5.5		9.5	36	2.9	49.3	
8.2		40.0	25.0	K		9.3	11	13.0	1.9	B	9.2		41.4	59.6		9.3		13.8	17.2		9.5		11.8	39.8	
9.5		42.5	10.1			9.3		18.1	47.9		9.5		46.3	28.8		8.7		14.8	27.0	K	8.9		14.3	34.6	
9.0		42.5	41.5	L		9.5		19.9	5.6		9.5	20	40.3	19.4		9.4		52.4	31.1		9.5		22.1	7.6	
8.9	1	0.6	10.7	K		9.5		36.7	21.5		9.5		41.5	13.8		9.5		55.8	4.5		9.0		23.6	53.4	
9.5		5.0	35.3			9.5		52.7	9.5		9.5		46.6	39.0		9.5	29	3.0	8.4		9.1		39.7	26.4	
8.5		8.7	26.8			9.3	12	2.4	31.1		9.5		48.7	47.5		9.0		4.2	25.5		9.5		39.9	38.1	
9.2		21.8	49.2	K		9.5		5.3	58.8		9.5	21	23.8	33.4		9.5		12.4	16.0		7.6		49.5	17.2	K
8.9		28.3	55.0	K		9.5		5.6	1.1		9.5		35.1	30.3		9.2		29.6	15.8		9.5	37	0.6	20.4	B
9.5		36.0	11.0			9.2		28.4	24.6	K*b*	9.3		50.2	43.4		9.0		30.0	20.0		9.3		3.8	27.6	B
8.9		38.3	42.1			9.5	13	17.7	52.2		9.3		56.3	11.5	B	9.1		38.9	29.1		8.0		11.2	49.4	K*b*
9.5		56.4	36.0			9.5		26.0	1.8		9.5	22	4.8	0.8	B	9.0		41.8	6.8		9.3		26.4	42.3	
9.2	2	17.4	18.8			8.7		27.6	11.5		9.2		21.7	28.5	*b*	9.5		43.7	46.7		9.2		27.2	18.3	
8.2		32.4	20.4	*B*		9.3		31.8	19.5	B	9.3		27.0	46.6		9.1		47.5	0.4		9.5		40.8	0.6	
9.1		53.8	30.7			9.0		31.8	39.3		8.9		47.8	1.5		9.5		50.9	43.6		9.5		47.3	27.5	
8.4		58.6	53.9	K		9.4		42.4	20.3		9.5		55.8	45.3		9.5		53.4	16.3		9.5		56.8	56.4	
9.5	3	18.3	20.7			9.4	14	3.1	22.2		9.3		57.1	57.9		9.5	30	4.9	24.7		9.5	38	0.1	6.0	
9.5		22.6	42.0			9.2		9.3	27.2	K	9.5	23	4.4	24.0		9.3		13.0	43.9		9.5		2.6	39.8	
9.0		23.1	36.9			9.5		11.8	11.2		9.5		21.1	15.5		8.6		23.4	49.4	B	9.5		12.7	55.2	
9.2		35.5	53.2	K		9.5		12.7	47.0		9.3		21.4	11.9		9.3		45.1	12.9		9.0		14.9	33.2	
9.0		55.4	52.6	K		9.5		30.4	57.8	B	9.5		22.0	56.1		8.6		51.8	29.4		9.5		18.9	20.4	
9.3		59.8	22.0	B		9.5		31.7	47.3		9.5		29.0	51.2		8.5		58.0	2.6	L	9.5		28.1	8.1	
9.5	4	2.0	18.4			9.0		46.9	29.6		9.5		33.8	34.8		9.5		58.2	5.5		9.0		30.0	14.4	
9.2		3.6	40.5			9.2		51.1	32.0		9.5		38.3	32.6		8.8	31	2.4	32.0		9.3		33.5	30.5	
9.0		6.0	9.0			9.5		58.8	17.3		9.2		43.2	21.8		9.5		21.3	55.2	B	9.5		39.3	46.8	
9.5		38.4	15.6			9.5	15	17.1	3.1		9.5		43.4	55.0		9.5		31.5	48.0		9.5		43.4	33.8	
9.5		40.5	7.7			7.8		17.5	50.0	K	9.5		45.6	52.1		9.5		33.5	15.2		8.9		59.9	47.6	
9.3		43.8	37.5			8.9		22.9	39.7		8.0		47.5	0.1	L	9.4		38.9	59.0		9.5	39	17.9	27.7	
9.4		53.2	14.1			9.5		32.4	27.6		8.9	24	8.9	39.6	K	9.2		42.7	55.5	αB	9.4		24.9	29.5	B
		+						+	—				+	—				+	—				+	—	
10pr.		31.54	0.00			10pr.		31.53	0.15		10pr.		31.53	0.28		10pr.		31.53	0.41		10pr.		31.52	0.52	

1189 *a*

9.6	9	48.8	9.5	B

1401 — 1460				1461 — 1520				1521 — 1580				1581 — 1640				1641 — 1700			
	6h		+3°		6h		+3°		6h — 7h		+3°		7h		+3°		7h		+3°	
m		″	′	m		″	′	m		″	′	m		″	′	m		″	′	
9.5	39	30.3	48.1	8.6	47	38.6	38.9	K	9.5	55	31.4	7.5		9.1	3	15.5	10.5	K	9.2	11	30.9	35.0	
9.5		30.6	41.5	9.3		40.7	0.1		8.3		31.4	26.1	K	9.3		24.2	41.0		9.1		55.5	23.7	aB
9.5		33.7	4.1	9.5		42.7	14.0		9.0		45.9	5.2	K	9.0		24.7	4.8	K	9.5		56.1	30.9	
9.1		55.8	14.4	9.5		55.2	7.4		9.2		47.0	32.1		7.0		36.5	25.1	K	9.0	12	16.8	49.9	
9.3	40	2.6	57.5	9.5	48	12.5	45.9		9.0		48.5	52.1		9.5		40.1	16.8		9.0		27.2	37.1	
8.5		14.6	4.7	K	8.5		43.4	18.7	B	9.5		55.0	29.5		8.3		45.2	6.8	K	9.3		39.7	11.4	a
9.5		28.8	53.6		9.0		44.0	4.5		9.2	56	12.6	43.2	a	8.5		51.3	56.3	K	9.0		43.6	29.8	
9.5		49.5	14.7		8.5		45.7	46.8	K	9.3		16.8	48.6		9.4		55.0	32.0		9.0	13	1.1	11.0	K
9.2		54.8	28.0		8.6		46.7	22.8	K	9.5		35.6	43.5		9.5		59.5	48.7		7.5		7.9	51.1	K
9.5	41	8.0	49.2		9.5		54.1	50.9		9.5		59.8	53.5		9.5	4	8.6	5.0		9.0		8.0	37.7	
9.3		9.6	30.2		9.2	49	2.4	29.2	K	9.1	57	1.7	20.6	b	9.5		9.5	29.9	B	8.5		10.5	40.5	K
9.5		21.6	48.2		9.2		7.0	28.1	K	9.1		2.2	28.6	a	9.4		18.2	36.6	B	9.2		13.3	51.8	
9.3		24.0	35.0		9.5		16.3	15.4		9.0		9.5	55.8		9.0		36.8	57.5		9.3		40.0	22.8	
8.1		51.7	51.8	K	9.5		40.1	44.2		9.5		23.9	22.8		9.5		44.5	23.0		9.5		44.1	38.1	
9.4	42	0.0	29.2		9.3		44.5	46.3		9.5		25.6	36.3		9.5	5	0.0	22.6		9.5	14	3.0	5.1	
9.1		5.0	28.9	aB	9.5		47.6	6.9		9.0		30.4	10.9		8.2		19.5	59.3	K	9.0		4.6	37.1	Kb
9.4		13.5	36.7		8.1		54.4	4.5	K	9.3		40.0	14.6	B	8.4		21.2	9.7	K	8.7		17.4	47.4	K
9.5		16.1	56.6		9.3		54.9	48.9		9.5		41.5	22.0		9.0		24.5	45.9		8.5		22.6	24.2	
9.5		19.2	38.4		9.5	50	14.5	36.9		8.9		48.5	54.7	B	9.1		25.7	39.4		9.0		27.8	16.9	
9.5		21.0	53.8		9.5		20.3	3.6		9.4		58.5	52.3		9.3		33.8	5.0	B	8.5		35.7	12.8	
9.2		26.2	4.4		9.2		33.1	32.6	K	9.5	58	0.0	45.6		9.5		36.4	14.7		9.0		38.9	54.1	
9.1		26.3	11.8	b	9.5		36.0	1.2		9.5		24.5	3.3		9.0		47.5	40.3		8.7		49.2	15.5	
9.5		43.5	20.3		9.2		39.1	28.5		9.1		31.0	44.0		9.5		53.0	25.0		9.5	15	10.9	53.4	
9.3		53.1	31.5		8.9		41.7	42.5	K	9.5		35.4	20.3		9.5	6	3.4	29.2		9.2		12.6	58.9	a
9.4		53.2	42.1		9.3		53.3	41.0		9.3		37.1	44.9		9.5		21.8	3.2		9.5		24.7	2.4	
9.4	43	0.4	36.9	B	9.2	51	9.8	14.7	b	8.6		42.0	6.5	K	9.1		24.6	58.1	B	9.2		32.1	34.3	K
9.5		4.1	32.6	B	9.3		14.3	5.4		8.9		44.5	57.4	Kb	9.4		28.8	52.6	B	9.5		42.6	38.1	
9.5		9.0	8.3		6.9		20.3	47.7	K	9.5		48.9	12.7		9.5		42.0	59.4	B	9.3	16	27.7	30.5	
9.5		10.8	32.6	B	9.5		29.0	52.4		9.5	59	10.4	24.3		6.0		43.8	21.4	K	9.5		35.6	52.0	
9.3		15.4	34.8		9.5		33.4	33.4		9.4		11.4	22.2		9.5		52.0	57.9		8.0		43.0	26.6	K
9.1		17.2	37.3	aB	9.5		34.1	48.8		9.3		13.7	3.7		9.5		56.2	3.1		9.2		45.1	40.7	aB
9.3		21.7	10.4		9.5		38.9	18.1		9.5		37.6	35.0		9.5	7	1.2	4.1		9.2		50.7	9.0	
9.3		23.3	5.4		9.5		55.0	8.2		9.2		39.8	32.4		8.9		2.6	8.5		9.3	17	17.6	51.3	
9.1		33.5	15.3		8.6	52	5.5	33.3	L	8.9		56.2	38.0		9.3		35.7	21.8		8.8		24.2	18.3	Kb
8.9		41.0	46.9		9.5		11.1	41.0		9.5	0	9.5	1.8		8.8		43.1	47.7		9.0		25.7	58.4	
9.0		50.6	58.0		9.5		19.0	2.8		9.5		15.5	14.1		9.5		43.1	59.1		9.3		32.9	50.0	
7.0	44	5.9	12.8	L	9.5		27.2	37.1		9.5		19.6	58.0		9.0		52.2	27.7		9.5		43.5	47.9	
9.3		12.3	44.2		9.5		41.3	1.5		9.5		24.7	4.4		9.5	8	30.8	55.1		9.5		45.1	9.3	
9.5		16.0	51.8		9.5		45.5	49.4		9.5		28.1	41.1		9.4		31.0	13.0		9.5	18	3.0	59.2	
9.5		20.8	29.9		9.2		52.4	36.5		9.2		32.2	35.9		9.4		43.3	57.9	B	9.3		17.5	56.6	
9.5		31.5	5.2		9.3		54.7	44.3		9.3		32.2	35.1		9.2		47.1	3.6	aB	9.2		27.3	9.1	
9.1		43.1	52.7	b	9.0	53	16.5	43.0		9.5		42.8	17.3		8.8		50.4	27.3		8.5		50.2	2.3	K
9.5		52.8	36.3		9.2		17.2	21.2		8.6		45.1	44.8		9.0		57.2	18.3	K	8.8		57.3	20.4	K
9.5		58.0	40.8		9.1		23.9	36.3		9.2		53.7	27.4	aB	9.0	9	1.1	39.5		8.8	19	0.2	6.2	K
8.8	45	0.3	24.9	K	9.5		24.0	42.6		9.5		54.8	54.6		8.6		5.7	26.6	K	9.5		2.5	11.4	
9.5		6.4	25.4		9.4		26.0	9.0		9.5	1	7.6	23.6		9.3		25.2	39.1		9.5		5.3	2.1	
9.3		52.9	9.7		9.2		29.1	22.8		9.5		12.3	26.9		9.3		26.4	55.3		9.0		26.4	40.9	
9.3	46	0.1	38.3		8.9		30.5	15.3		9.4		13.0	35.5		9.5		38.1	4.6		8.5		35.1	51.3	K
8.8		1.0	34.6		9.4		47.1	12.3	B	9.5		13.4	23.6		9.5		41.2	27.6		9.5	20	8.2	46.5	
9.2		10.3	7.4	K	9.4	54	11.3	51.7	B	9.5		20.5	11.3		9.5		44.9	52.7		9.2		31.2	34.0	
8.7		16.2	25.0	K	9.3		13.5	54.7		9.4		33.6	9.5		9.5	10	4.1	41.2		8.2		49.8	40.5	K
9.2		43.7	3.6		9.0		27.0	30.8		9.5		34.9	38.9		9.0		11.2	46.1		9.5	21	6.7	3.4	
9.4		57.0	50.7		9.5		34.1	34.1		9.0		52.1	35.8	K	9.3		24.0	0.6		8.0		43.1	40.5	K
9.5	47	2.7	29.0		9.0		34.5	15.6		9.4	2	3.2	20.0		9.0		47.3	26.3		9.4		56.1	24.9	B
9.5		3.5	4.1		9.5		46.6	27.5		9.3		8.5	22.8		9.5		53.1	45.3		9.5		56.9	51.0	
9.0		11.4	44.6		8.5		52.1	42.5	L	9.5		19.0	2.0		9.5	11	4.7	51.3		9.5	22	1.9	30.3	
9.3		13.8	59.0		8.3		56.5	11.4		9.4		29.3	8.7		9.5		10.6	11.0		9.2		9.5	2.8	b
8.5		14.9	25.5	K	9.3	55	1.7	2.7		9.5		41.0	21.2		8.7		14.7	6.8		9.5		14.2	42.7	
9.5		21.8	16.9		7.9		14.8	59.5	K	8.5		52.1	11.9	K	8.7		25.6	47.5		9.5		35.4	13.8	
9.5		30.1	46.3		9.3		31.4	15.1		9.0	3	7.0	14.6		9.3		29.5	24.3		9.5		39.5	1.4	
		+	—			+	—			+	—			+	—			+	—	
10pr.		31.52	0.62	10pr.		31.51	0.75	10pr.		31.51	0.86	10pr.		31.50	0.96	10pr.		31.49	1.10	

1652 a			
9.0	13	13.8	44.0

1701–1760				1761–1820				1821–1880				1881–1940				1941–2000			
	7ʰ		+3°		7ʰ		+3°		7ʰ		+3°		7ʰ–8ʰ		+3°		8ʰ		+3°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
8.0	22	51.3	35.4	K	9.3	34	29.1	33.6	9.0	43	55.2	50.3	9.5	56	5.5	14.3	9.5	10	7.6	0.7	
9.0		58.8	37.1	K	8.8		32.0	5.0	K	9.5	44	6.7	6.9		9.0		14.9	38.7	B	8.0		11.7	14.0	K
9.1	23	3.6	13.7	*a*B	9.2		38.7	51.8	*a*B	9.0		19.2	53.8		8.0		21.5	47.5	K	8.0		16.5	22.9	K
8.3		36.8	9.4	*B*	8.5		39.1	38.5	K	7.5		32.9	39.1	K	8.5		29.5	24.8		9.5		39.0	27.2	
9.1		46.3	32.5	*a*B	9.5		53.9	15.9		9.3		39.5	19.3	B	9.5		44.0	44.6		9.4		52.5	36.3	
8.8		48.0	20.5		9.3		55.8	2.9		8.8	45	1.1	36.7	K	9.0	57	21.5	44.6		9.0	11	8.5	1.9	
9.5		52.9	31.1		9.5	35	11.0	55.7		8.0		7.5	45.4	K	9.5		53.0	29.4		9.3		12.0	7.9	
7.4	24	28.3	1.8	K	8.5		31.0	12.7	K	9.3		24.9	26.6		8.9		58.2	55.5	K	9.2		29.5	27.2	
9.5		31.1	22.4		8.8		39.8	27.9	L	9.2		26.3	1.1		9.3	58	5.3	54.7	B	9.4		33.7	48.4	B
9.5		34.0	44.0		9.5		43.3	10.3	*a*	9.0		35.1	11.7		9.3		9.5	44.3		9.2		34.0	31.0	
9.5		39.0	59.5		8.3		46.8	33.4	L	9.5		40.2	37.5		8.3		13.5	35.6	*B*	8.7		46.0	16.6	
9.5		40.7	30.1		8.5		55.6	12.4	K	9.5		47.7	2.9		9.1		42.9	8 8	*a*B	9.5	12	1 4 3	9.6	
9.2		42.4	1.9		7.7		55.8	50.5	L	9.5	46	7.6	57.5		9.3	59	28.0	45.6		9.5		15.0	22.2	
9.0		50.1	44.7		9.5	36	14.0	10.0		9.5		10.7	31.5		9.5		51.8	21.6		9.1		19.8	11.0	*n*B
6.5	25	36.8	35.3	K*b*	9.0		23.5	10.0	K	9.4		51.4	17.0		9.0		54.0	47.4		9.4		25.5	53 3	B
9.5	26	10.9	37.6		9.5		26.4	50.6		9.5		57.3	23.0		9.3		57.1	10.3		9.5		26.3	12.8	B
9.3		15.8	35.4		9.5		32.6	8.2		9.5	47	19 8	40.5		9.5	0	2.5	13.0		9.0		27.1	32.8	
8.7		20.6	57.1	K	8.7		56.5	50.2		9.5		34.6	15.9		9.5		29.7	9.9		8.3		32.3	13.0	B
7.1		40.8	40.9	K	9.3		56.6	11.3		9.5		38.7	11.3		9.5		32.1	51.3	B	8.8		55.5	34.1	K
9.2		42.2	25.9	*a*B	9.3		58.2	43.7		8.8		59.8	38.8	K	8.5	1	7.0	22.7	K	8.0	13	8.8	6.7	L
9.3		43 0	5.7		9.3	37	19.5	1.9		8.5	48	4.7	48.5	K	9.0		9.0	11.2		9.4		15.2	47.9	
9.5		57.1	30.8		9.5		20.2	26.6		9.5		11.0	1.6		9.5		12.5	18.2		9.5		35.2	33.4	
7.1	27	11.4	1.8	K	9.5		22.1	55.0		9.0		42.3	22.8		9.5		23.3	58.5		9.0		57.2	47.6	
8.0		17.1	39.5	K	9.0		25.2	22.1		9.2		46.4	47.0	*a*B	9.0		49.3	9.3		9.5	14	15.5	28.2	
8.0		23.8	36.3	K	9.5		36.3	18.3		9.5		50.2	57.5		8.6		56.8	50.5		9.3	15	33.8	33.4	
9.2		26.2	44.0		9.0		48.7	12.0		9.5	49	19.7	49.2		9.5	2	1.8	53.8		9.5		43.1	9.7	
9.5		30.7	13.7		9.0	38	16.6	15.9		9.3		21.9	17.5	B	9.0		16.6	43.3		9.5		47.7	44.8	
9.5		33.9	53.0		9.3		17.2	30.8		8.0		30.8	20.7	L	9.4		20 9	6.6		8.9	16	8.5	41.6	B
9.5		52.4	53.7		9.3		49.7	27.0		9.5		38.6	43.3		9.5		34.0	46.4		9.4		11.8	19.5	
8.3	28	10.6	57.3	K	9.3		49.9	29.0	B	9.5		42.2	50.8		9.5		44.0	32.5		9.4		13.7	55.9	B
9.5		20.8	46.2	B	9.5		58.0	34.6		8.3	50	0.4	1.8	K	8.7		50.5	26.5	K	9.5		31.5	25.0	
9.5		26.7	13.7		8.2	39	7.0	58.5	K	9.5		12.7	31.7		9.5	3	0.7	54.3		9.3		35.4	9.0	
8.2		41.6	6.2	K	9.5		10.3	7.0		9.3		20.1	26.5		7.5		7.5	22.4	K	9.3		51.6	38.7	B
9.1		53.8	1.0		9.3		13.6	51.1		9.5		20.6	22.8		9.3		11.5	41.8		8.7		52.2	44.9	K
8.2		55.8	12.3	K	9.5		13.8	56.9		9.5		22.3	36.1		9.5		32.5	13.7		9.0		57.5	13.3	K
9.5	29	8.4	50.3		9.5	40	8.7	6.2		9.5		30.4	54 9		8.8		58.3	32.8		8.5	18	0.2	57.6	B
9.3		22.0	13.4		9.3		33.1	15.2		9.3		43.1	47 5		9.2	4	25.5	21.7		9.5		47.2	1.5	
9.5		37.3	4.4		9.5		42.0	46.8		9.5		46.6	27.4		9.2		26.0	44.6		9.5	19	8.5	16.7	
9.3		37.7	52.7		9.5	41	11.7	7.2		9.5		55.3	37.1		9.5		34.0	13.7		9.3		28.7	58.1	
9.0		48.6	30.8		9.5		26.9	53.2		7.5		57.5	19.7	K	9.3		38.7	40.8		9.5		29.0	31.4	
9.5		53.3	39.5		9.3		33.0	36.0		9.5	51	22.1	31.1		8.7		42.4	30 7	K	9.5		52.8	0.2	
9.0		56.8	29.7		9.5		39.2	0.6		8.8		50.6	34.6		9.5	5	27.3	40 6		9.4	20	15.4	1.4	B
9.3	30	19.5	33.2		8.0		55.8	35.3	L	8.8	52	45.6	48.8	K	9.0		31.7	36.5	B	7.7		21.5	41.1	K
9.0	31	13.2	34.5		9.5	42	2.6	8.8		8.2		48.8	39.1	K	8.9		43.0	33.9	K	9.5		40.8	50.4	
8.2		13.5	51.3	K	8.7		17.0	11.3		9.0		54.4	13.4		9.5		57.6	1.7		9.5	21	11.2	22.3	
9.0		15.:	9.4		8.8		17.0	56.7	K	8.5	53	0.9	51.5	K	8.9	6	6.8	27.6	K	9.1		14.7	47.3	
9.5		17.7	12.4		9.3		21.7	1.8		9.5		14.7	1.8		9.2		54.8	33.7	B	9.5		41.5	36.5	
9.5		23.6	41.9		9.5		30.9	8.9		9.5		16.2	7.5		9.5	7	10.5	26.8		8.9		55.0	33.4	
9.0		44.5	37.0		9.5		34.6	50.3		9.4		20.6	56.8		9.3		24.6	42.6	B	8.9		56.8	44.8	
9.5	32	6.0	35.7		9.3		35.8	6.4	B	9.0		35.1	34.2		8.5		26.6	5.9	K	8.9	22	13.7	38.9	
9.5		6.5	9.0		9.5		40.5	51.5		9.5		47.4	15.9		9.5		50.6	4.5		9.5		41.2	13.2	
9.3		37.3	0.2		9.5		44.0	11.9		9.5		50.6	50.7		8.0		59 0	16.1	K	8.5		48.8	19.2	K*b*
9.3		42.9	48.5		9.4		54.3	43.6		9.4	54	2.8	31.4	B	7.5	8	16.5	13.7	K	9.0		52.3	55.3	
9.3	33	3.3	16.9		9.0		59.5	38.8		9.5		31.4	47.5	B	9.5		56.5	28.1		9.0	23	6.1	9.6	
9.0		3.7	13.4		9.4	43	5.9	6.7		7.8		32.9	22.7	*B*	9.5	9	6.4	37.7	B	9.3		12 5	13.5	
9.5		55.6	22.5		8.9		8.7	3.6	K	8.1		55.2	28.6	B	9.5		9.2	48.4		9.5		56.5	34.1	
9.2		58.1	46.7		9.4		12.1	2.9		9.0	55	12.5	1.7	B	9.4		18.8	57.9		8.7	24	14.8	11.9	K
7.0		59.0	58.0	K	6.7		12.8	38.8	K	9.2		16.1	55.7	*a*B	9.5		31.6	2.8		9.5		40.2	37.2	
9.2	34	5.6	38.8		9.2		29.2	16.9		9.5		17.7	34.0		9.5		49.3	2.2		9.5		55.9	45.1	B
9.3		28.4	53.5		9.5		31.1	37.0		9.0		21.6	7.6		9.2	10	1.0	57.7	*b*	9.5	25	8.3	41.1	
		+	—				+	—				+	—				+	—				+	—	
10pr:		*31.48*	*1.25*		*10pr:*		*31.46*	*1.40*		*10pr:*		*31.45*	*1.54*		*10pr:*		*31.42*	*1.71*		*10pr:*		*31.40*	*1.87*	

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	8h		+3°			8h		+3°			8h—9h		+3°			9h		+3°			9h		+3°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	25	12.2	16.4		9.5	41	42.2	29.1		9.5	54	6.7	52.4		9.5	9	29.6	48.5		9.5	30	5.3	51.3	
9.3		22.7	0.7	B	9.5		52.8	20.7		9.0		13.0	4.8	B	8.0		40.8	16.9	K	9.5		59.1	2.7	
9.4		44.4	3.2		8.3	42	12.8	16.6	K	8.5		13.7	54.9		9.5	10	6.0	5.6		9.5	31	14.0	45.8	
9.5	26	14.2	23.3		9.5	43	9.3	45.6		7.5		26.7	14.2	K	8.8		23.0	7.8		9.5		21.1	20.4	
8.9		29.5	58.4		9.3		17.1	26.7	B	8.3		30.7	50.5		9.0		34.6	21.5	K	9.0		25.3	52.4	
9.5		53.5	46.7		9.3		27.3	27.0	B	9.3		34.2	52.4		8.9		35.3	41.0	K	9.3		31.6	57.8	
8.9	27	5.6	11.1		9.4		30.7	25.0		9.5	55	17.8	48.2		9.5	11	6.1	43.8		9.5		44.1	37.1	
9.3		21.5	19.9		9.5		38.0	37.7		9.5		19.0	26.7		9.5		24.5	23.4		8.8		48.8	7.5	
*9.5		33.2	10.8		9.4		38.0	57.8		9.5		26.7	28.8		9.0	12	16.8	37.9	K	7.7	32	6.9	50.6	Kb
9.2		37.3	28.8	aB	9.5		38.8	55.6		9.4		39.3	50.3		9.5		30.0	58.4		9.0		37.9	37.2	K
8.9		39.5	36.9		9.3		40.6	7.7		9.5	56	5.8	54.8		9.0		39.6	24.4		9.5		46.2	18.0	
9.3		43.5	48.0		9.4		41.2	23.5		9.0		26.6	58.4		9.5		40.5	44.5		9.0	33	13.3	8.6	
8.9		48.8	47.0		9.2		47.0	8.8		8.8		39.7	36.7	K	7.2	13	37.5	34.0	Kb	9.5		40.5	0.4	
7.0		51.7	14.3	K	9.5		51.4	7.0		8.5		40.9	36.1	K	9.5	14	45.6	13.6		9.5		49.1	36.3	
9.3	28	43.0	11.0		9.3		53.6	28.2	B	9.5		48.7	27.3		8.8	15	23.4	58.5	K	9.5	34	0.7	36.6	
9.0	29	20.5	31.7		8.8	44	21.0	33.7	K	9.4		55.3	16.4	B	7.5	16	7.4	1.0	K	9.0		7.0	10.1	
9.5		34.4	8.8		9.5		40.3	17.0		9.0	57	2.2	18.8		8.8		11.6	21.9		9.5		41.8	34.1	
9.3		34.5	18.8		9.5		45.0	1.0		9.0		10.6	7.4	B	9.5		45.5	52.5		9.3		49.1	36.6	B
9.3		49.4	55.0		9.5		50.8	29.1		8.8		33.3	30.9		9.5	17	15.1	14.3		9.4		51.1	49.9	
9.5	30	10.5	35.8		9.0		55.0	4.3		9.5	58	43.0	11.8		9.4		24.9	4.5	B	9.5	35	32.1	56.9	
9.0		21.4	54.7		9.0	45	17.8	34.0	K	9.0		44.5	37.5		9.4		53.6	25.7		7.5		56.4	17.4	K
9.4		22.9	8.1	B	9.5		26.2	59.4		8.0	59	5.4	23.8	Kb	7.8	18	28.5	39.3	Kb	8.8	36	48.0	35.1	K
9.5		27.7	2.1		9.3		26.6	55.1		9.3		32.1	14.6		9.0		38.6	19.1		8.9		52.6	4.6	
9.0		36.3	1.5		9.5		50.0	17.9		7.3		43.7	8.7	K	8.2		56.4	7.8	K	9.4		59.1	1.0	
9.2		47.6	32.4		var	46	0.0	36.4	B	9.5		43.8	37.2		9.5	19	7.3	34.4		9.5	37	32.3	24.6	
4.9	31	10.7	50.5	K	9.5		9.0	12.5		8.8	0	5.6	40.6	K	9.5		9.0	22.3		9.5		44.4	9.8	B
9.2		14.3	13.8		8.6		19.5	3.1	K	9.3		29.3	54.3		9.0		29.2	5.9		9.5	39	43.0	19.7	
9.5		53.2	27.3		8.7		46.8	39.9	L	9.4		42.0	6.8		8.5	20	24.5	28.5	K	9.2	41	20.0	15.1	K
9.0	32	49 3	25.3		9.2	47	6.4	8.2		9.0		50.5	45.2	Kb	9.5		56.6	20.2		9.4		50.2	3.4	
9.0	33	8.2	34.7		9.3		27.2	33.4		9.5	1	19.2	13.2		9.3	21	30.4	24.0		9.1	42	11.4	47.0	b
9.5		12.3	37.5	a	9.5		36.6	4.9		9.5		45.0	35.8		9.5		36.1	58.7		9.5		35.3	25.7	
8.0		56.1	7.1	K	9.5		37.3	24.3		9.1		50.0	49.6	K	9.1		42.0	45.3		9.3	43	24.2	45.0	B
9.5	34	15.1	3.1		8.1		38.4	11.2	K	9.5		56.3	37.5		9.5		59.0	14.2		9.2		46.0	13.8	
9.5		35.1	3.1		9.5	48	4.6	12.3	B	7.8		57.6	31.6	K	9.3	22	8.8	51.5		9.0	44	1.4	49.6	Kb
9.5		50.8	35.8		8.8		26.3	15.9	K	9.5	2	13.5	56.3	B	9.3		10.1	48.0		9.1		23.3	8.2	aB
9.0	35	11.7	0.9	K	9.0		31.1	51.4		9.5		30.0	48.3		9.0		11.0	31.6	K	9.5		26.0	28.6	B
8.8		26.9	5.1		9.0	49	28.7	26.6		9.5		58.1	48.0		9.5		50.5	16.5		8.5		33.6	30.1	L
9.0		36.8	28.8		9.5		31.1	54.6		9.5	3	2.1	14.9		9.4		57.0	12.5		9.2		35.7	50.6	
5.0		38.1	55.4	K	7.3		41.2	5.0	K	9.4		18.4	1.4		9.0	23	8.1	27.5		8.9		42.8	53.6	K
9.0	36	26.0	16.6	K	9.5		44.7	12.8		*9.4		49.6	41.0		9.5		13.0	20.1		6.0		44.3	7.6	L
8.5		35.3	36.0	K	8.8		46.4	56.0	K	9.0	4	25.5	32.3		7.2		34.1	43.8	K	9.4	45	9.1	7.5	
9.5		36.5	31.5		9.5	50	8.7	52.8		8.5		29.5	44.5	K	9.3	24	2.0	50.8		9.4		16.6	1.6	
9.1		52.7	16.9		9.0		15.1	59.6	K	9.5		30.8	17.4		9.5		24.7	5.1		8.6		19.9	38.6	K
9.3	37	57.2	27.0		9.5		18.5	27.9		8.8		46.9	50.8		9.1		38.5	56.3	b	9.5		53.8	16.9	
9.3		58.8	5.8		9.5		27.0	33.9		9.5		56.0	50.7		9.5	25	1.1	26.7		9.5		57.7	5.2	
9.5	38	16.0	34.7		9.0		54.3	6.6		9.0	5	1.6	16.4		9.5		9.1	46.6		9.5	46	2.3	45.7	
9.5		16.7	21.4		9.1	51	1.3	23.6	b	9.5		13.1	31.3		8.8		12.0	36.2	K	9.5	47	31.4	14.7	
9.5		55.4	7.2		9.5		2.8	30.9		9.3		41.3	54.9		9.3		35.4	13.3		9.5		51.6	23.7	
9.3		55.8	24.6		9.5		35.0	52.1		8.5		47.6	57.5	K	9.3		52.9	17.7		9.5		58.9	41.5	
9.5		59.6	1.3		9.5		38.2	47.2		8.8	6	1.0	30.6	K	9.5	27	10.5	14.1		8.5	48	28.5	28.6	K
9.5	39	4.1	5.8		9.3		40.7	10.0	a	9.0		12.1	27.1	K	9.0		46.3	3.5		9.3		37.4	37.1	K
9.5		28.3	5.5		9.5		46.2	8.7		9.5		17.6	50.8		9.0		58.4	15.5		9.5		39.0	19.1	
9.2	40	22.4	41.2	aB	9.5	52	19.3	6.9		8.0		22.3	28.5	K	8.5	28	11.7	17.2	Kb	9.2	49	16.2	35.8	b
9.4		24.6	39.3	a	9.5	53	9.5	59.0		9.5		41.5	16.4		9.5		17.4	54.4		9.5		42.8	7.5	
8.0		26.8	1.4	B	9.5		17.2	49.6	B	9.5		47.0	41.3		9.5		39.7	30.2		9.4		44.7	8.6	
7.5		39.7	7.0	K	9.5		33.3	38.8		9.3	8	7.5	59.1		9.5		52.8	17.6		9.5	50	7.0	13.9	
7.3	41	0.5	5.4	K	9.0		41.2	18.7	K	8.5		22.0	9.4	K	9.5	29	4.1	14.2		8.9		51.2	3.0	
8.9		1.8	36.1	B	8.8		48.8	8.7		9.3		46.1	55.7		9.0		18.0	43.7	K	9.3	51	8.4	12.2	a
9.0		3.8	8.0	K	9.0	54	2.2	22.1	K	9.4	9	14.7	44.0	B	9.5		43.2	24.8		9.5		22.2	19.6	
9.0		11.7	23.9	B	9.0		4.3	33.2		9.2		18.5	2.0		9.2	30	2.7	11.2	b	8.8		29.8	5.6	K
10pr.		31.36	2.07		10pr.		31.33	2.23		10pr.		31.30	2.38		10pr.		31.24	2.58		10pr.		31.18	2.76	

2008a				
9.6	27	29.6	28.7	B

2160a				
9.7	4	13.8	59.2	B

2301—2360

m	9ʰ—10ʰ ′ ″	+3° ′	
9.0	51 52.1	39.2	K
9.0	52 53.4	48.4	
9.5	53 26.8	19.0	
9.5	34.3	7.9	
9.4	35.0	12.8	
9.0	41.5	59.0	K
9.5	54 41.1	6.6	
9.1	55 13.4	45.5	*a* B
8.9	15.0	12.9	*B*
9.5	29.5	20.6	
6.5	56 37.6	54.3	K*b*
9.4	57 0.9	3.1	
9.2	58 35.3	44.5	
8.3	39.2	8.2	K
9.0	54.7	32.2	
9.3	59 26.1	40.6	
9.5	1 3.9	7.7	
9.5	31.4	41.6	
9.5	50.7	51.3	
9.5	54.1	25.6	B
7.7	55.4	5.1	K
8.6	2 8.1	3.6	K
8.5	10.9	52.1	K
8.7	15.5	53.2	K
9.3	42.9	24.8	
9.4	3 6.2	37.1	B
9.3	30.0	16.4	K*b*
9.5	4 15.1	59.6	
9.5	46.9	25.5	
8.8	54.4	28.1	
8.7	5 18.2	49.6	K
9.2	25.8	3.8	
8.3	30.5	52.5	K
7.5	42.8	47.0	K
9.3	43.6	8.6	
8.5	6 8.8	23.0	K
9.5	16.4	56.7	
7.8	34.4	52.5	K
9.2	46.0	55.9	
9.3	8 7.3	3.5	
9.5	9.6	23.3	
8.6	9 3.3	8.3	
9.5	16.2	31.1	
8.5	27.2	9.4	K
9.5	10 43.8	8.6	
9.2	52.8	40.0	*b*
9.5	12 35.0	49.5	R
9.2	40.0	56.2	R
9.3	42.0	49.7	*a*R
9.5	53.6	53.1	R
9.0	13 20.0	5.1	K
6.5	32.0	0.8	K
9.3	14 58.6	8.1	B
9.0	15 4.5	31.4	
8.5	44.3	20.8	K
8.5	16 15.0	22.1	K
8.7	15.9	22.8	K
6.7	43.5	6.1	L*b*
9.5	49.8	50.4	
9.5	52.6	28.7	
10 pr.	*+ 31.11*	*− 2.93*	

2361—2420

m	10ʰ ′ ″	+3° ′	
7.0	16 55.7	6.9	L*b*
9.2	17 26.6	2.8	
9.3	54.6	23.5	
9.5	18 3.0	45.5	
7.5	29.2	39.0	K
9.0	49.0	17.0	K
9.0	51.3	46.9	
9.3	19 30.3	40.4	
9.0	20 52.1	54.3	B
9.0	54.2	24.2	
7.7	21 29.5	23.1	K
8.5	47.0	33.5	K
8.7	22 28.8	48.6	K
9.3	58.5	5.3	
9.3	23 31.9	37.1	
9.5	33.9	54.8	
9.4	24 5.1	8.7	B
9.5	7.3	2.2	
7.5	8.9	35.9	K
9.3	10.3	19.8	B
9.0	28.8	43.8	
9.3	25 22.6	38.6	
9.3	24.0	47.2	
9.5	38.1	39.0	
9.5	53.4	20.8	
9.5	26 12.8	32.1	
8.5	25.9	44.1	K
8.2	28.8	24.5	K
8.3	45.5	30.7	K
9.5	27 58.8	28.7	
9.5	28 12.6	7.7	
8.8	20.3	17.7	S
9.4	23.3	25.2	B
7.8	34.6	30.0	K
9.5	29 0.0	45.5	
9.5	30.1	44.2	
9.5	30 59.4	35.5	
9.0	31 7.5	21.3	
9.5	23.6	38.0	
9.5	32 4.0	44.5	
9.4	15.3	3.6	B
9.3	26.1	16.2	K
8.5	34 44.5	33.5	K
9.0	35 27.1	21.4	K
9.2	36 26.3	59.6	*a*
8.0	36.8	58.6	K
9.5	49.2	47.0	
6.5	37 44.0	14.0	L*b*
9.5	38 8.4	29.7	
9.5	20.3	9.1	
8.2	39 23.0	51.9	K
8.2	40 1.1	16.5	K
9.0	8.2	34.2	K
9.0	18.3	26.9	B
8.6	29.4	25.1	K
9.0	40.6	3.3	K
8.7	41.5	19.4	K
8.7	52.3	14.9	K
8.7	41 3.0	9.1	K
9.5	26.9	30.0	
10 pr.	*+ 31.04*	*− 3.07*	

2421—2480

m	10ʰ—11ʰ ′ ″	+3° ′	
9.3	41 56.0	13.4	
9.2	42 29.1	5.8	
8.5	40.4	13.6	K
9.5	43 14.0	20.8	
9.5	16.2	49.0	
8.0	45.5	28.7	K
9.3	44 24.6	12.5	
8.8	45 58.7	5.6	
8.3	46 23.9	26.0	K
9.5	24.0	21.6	
9.3	46.4	7.7	B
9.0	59.5	26.1	K*b*
9.3	47 47.4	40.1	
9.2	51.4	22.6	*h*
9.3	48 34.7	14.0	
9.5	49 23.8	26.4	
9.5	39.1	29.4	B
9.2	50 21.4	26.0	K
9.2	21.9	19.9	K
9.5	58.4	50.8	
9.5	51 17.4	56.6	
9.3	20.0	46.3	
9.5	54.1	2.5	
8.8	52 40.9	0.5	K
9.1	53 5.8	45.4	K
9.5	54 29.3	32.1	
9.5	47.3	45.3	
9.5	55 14.2	54.5	
9.3	49.8	43.9	
9.4	56 9.7	30.8	B
9.5	31.5	13.0	
9.0	54.6	56.9	K
*8.4	58 9.2	9.6	K
9.3	24.7	50.7	
8.6	48.8	10.7	K
9.1	59 3.9	2.0	
8.5	7.8	52.9	K
8.8	20.3	39.7	K
9.3	31.2	20.4	B
9.3	49.0	30.6	
9.0	0 30.4	9.9	
9.1	49.9	58.3	K
8.2	59.4	59.9	K
9.5	1 24.5	27.2	
9.5	56.0	35.9	
8.0	2 16.0	14.3	L
9.3	24.0	32.4	
9.5	3 0.0	11.5	
9.3	4 6.2	35.1	
8.7	7.5	18.3	K*b*
9.5	42.8	29.7	
9.5	5 6.0	19.9	
9.2	23.2	7.5	
8.8	6 8.7	33.1	K*b*
7.2	26.5	3.5	K
9.3	7 31.0	45.2	
9.4	8 6.6	56.5	B
9.5	9 35.7	24.5	
9.5	44.0	53.0	
9.5	10 33.8	14.4	
10 pr.	*+ 30.94*	*− 3.21*	

2481—2540

m	11ʰ ′ ″	+3° ′	
8.9	11 9.4	56.1	K
9.0	11.2	36.7	
9.0	11.5	37.3	
9.5	47.9	17.0	
9.2	12 13.2	44.5	*g*
9.5	33.8	31.4	
9.5	53.9	54.1	*B*
8.3	13 20.4	40.2	K
9.5	25.8	39.4	
8.0	28.9	12.5	K
9.5	59.9	54.3	
9.5	14 51.9	2.8	
9.3	15 45.2	57.4	K
9.4	16 40.1	6.2	
9.5	17 8.2	46.2	
9.3	12.9	41.6	
9.5	24.4	37.5	
9.5	32.8	42.1	
9.2	53.3	6.0	
9.0	18 34.9	14.9	K
9.5	52.4	36.0	
7.5	19 24.4	48.2	K
8.0	25.2	47.2	K
5.0	20 28.4	40.3	K
8.2	30.9	36.6	K
8.2	59.2	35.0	K
9.3	21 18.9	38.6	K
8.8	32.4	31.9	K
9.5	22 0.4	36.8	
9.4	9.7	10.5	B
9.5	37.4	43.5	
9.3	49.3	38.7	
8.1	23 55.4	51.8	K
9.5	56.4	13.2	
9.5	24 13.8	48.2	
9.5	25 48.4	50.7	
9.5	55.3	33.0	
8.6	55.9	16.7	K
7.2	26 9.3	19.1	K
9.5	12.0	15.0	
6.2	57.8	52.7	K
9.3	27 40.4	39.3	*b*
9.5	28 39.3	54.9	
9.5	29 53.5	21.1	
9.5	30 52.9	33.1	
9.0	57.5	9.4	*R*
8.5	32 4.8	39.3	K
9.5	16.8	49.6	
9.4	22.2	24.1	B
9.5	43.8	51.6	
9.3	33 43.3	49.5	
9.5	47.9	54.0	
9.4	34 4.4	48.9	K*b*
9.3	10.9	6.9	
9.0	13.7	40.9	K
9.5	39.9	14.6	
8.8	42.9	41.6	K
9.5	56.9	28.1	
7.5	35 0.1	10.4	K
9.5	0.4	36.1	
10 pr.	*+ 30.85*	*− 3.29*	

2541—2600

m	11ʰ—12ʰ ′ ″	+3° ′	
9.5	35 18.0	37.9	
9.3	48.8	45.2	
9.3	37 12.4	39.3	
8.7	32.6	52.5	
8.7	34.6	9.0	K
9.5	43.0	37.9	
9.5	51.1	20.1	
8.5	38 5.2	27.4	L
8.5	17.4	38.2	L
9.3	51.7	40.7	B
9.5	39 15.8	41.2	
9.3	35.2	55.1	B
9.0	40 1.3	42.8	
9.4	12.9	43.9	
9.3	20.8	33.4	
9.4	26.2	47.3	B
9.5	42 12.9	34.0	
9.5	17.9	14.9	
9.5	20.3	37.7	
8.6	21.2	2.5	K
9.2	23.5	9.9	*a*B
9.1	49.8	33.4	*b*
9.5	43 9.7	3.7	
9.5	25.5	32.0	
9.5	44 10.4	14.9	
8.5	45 0.8	53.2	K
9.0	8.9	57.4	K
9.5	46 38.1	16.9	B
9.5	47 17.6	57.1	
9.5	21.9	53.5	
9.5	28.0	28.2	
8.9	48 0.5	5.9	K
9.5	10.8	9.3	
9.5	30.0	7.3	
9.4	48.4	25.3	B
8.5	49 32.3	12.9	K
8.9	58.3	50.6	L
9.5	50 48.9	21.0	
9.5	51 25.5	0.7	
9.5	27.3	31.5	
9.5	29.6	15.0	
9.5	58.5	14.6	
9.0	52 2.5	41.3	B
9.5	37.1	22.6	B
9.5	53 5.7	50.8	
9.2	12.9	13.9	
9.5	42.0	46.6	
8.7	54 3.6	19.2	K
9.5	55 25.0	14.7	B
9.4	56 10.0	1.1	
9.5	25.5	45.5	
9.0	48.8	42.6	
9.0	57 8.4	25.8	
8.3	11.0	57.8	K
9.5	53.7	0.2	
9.4	58 13.3	31.1	B
9.3	33.0	8.4	
9.0	0 15.6	19.2	
9.5	2.5	1.1	
9.5	32.1	53.1	
10 pr.	*+ 30.77*	*− 3.33*	

2452 *a*

9.5	57 14.3	16.6

12° — 14° +3°

2601—2660

m	12ʰ ′ ″	+3° ′	
9.5	0 43.9	55.8	R
9.3	50.3	53.7	Kb
8.5	1 15.9	54.4	K
9.3	41.7	14.5	a
8.7	57.0	54.2	Kb
9.0	59.4	14.7	K
9.5	2 28.4	37.2	
9.5	3 5.4	10.9	
9.5	16.4	52.2	
9.2	21.7	8.1	K
8.8	4 7.1	25.5	Lb
9.2	20.6	56.1	
9.5	33.0	11.9	
9.3	5 10.0	29.3	
9.5	53.4	50.1	b
7.0	6 32.6	4.7	K
9.3	8 17.1	2.2	
9.5	32.4	49.5	
9.5	9 5.1	28.3	
9.5	12.4	47.1	
9.5	18.7	7.4	
9.5	46.4	44.6	
9.5	10 3.0	42.5	
9.3	34.2	11.9	B
9.3	40.0	23.7	
8.5	54.2	54.0	K
9.5	11 40.3	34.3	
9.2	43.7	45.0	
9.5	12 7.4	31.0	
9.5	11.2	52.6	
9.5	33.7	9.4	
9.3	51.0	51.9	
9.5	13 6.0	46.0	
9.5	27.7	44.0	
8.7	14 2.0	31.8	K
9.5	31.5	50.0	
9.3	15 56.7	37.6	
9.3	16 4.0	39.4	
9.5	40.7	6.7	
8.9	17 17.4	11.5	K
9.4	32.1	31.1	
9.5	58.7	52.2	
9.5	18 23.4	27.6	
9.0	19 8.4	15.0	K
9.0	34.8	28.7	
9.5	20 4.4	42.5	
9.5	12.1	53.8	
9.4	46.7	20.0	
9.5	47.5	39.7	
9.5	50.4	42.5	
9.5	21 14.2	16.4	
9.5	20.9	55.6	
9.5	26.6	45.7	
9.5	58.5	57.7	
9.5	22 17.3	55.1	
9.0	21.2	26.5	
9.5	46.6	2.9	a
9.5	23 30.5	17.8	B
9.2	36.6	6.4	a
8.6	51.8	6.2	K
10 pr.	+ 30.68	− 3.33	

2661—2720

m	12ʰ ′ ″	+3° ′	
9.5	24 40.4	45.4	
9.5	25 20.4	36.4	
9.5	27.6	14.0	
9.5	26 2.6	10.9	
8.5	11.8	43.5	K
8.7	44.8	53.1	K
9.5	45.9	44.5	
8.8	52.5	15.8	B
8.4	54.3	12.0	B
7.8	27 53.3	3.1	K
9.5	28 58.7	11.6	
8.8	30 47.2	45.3	Kb
8.7	31 35.3	44.6	K
9.3	32 24.1	28.2	
9.5	30.8	8.3	
9.0	50.6	29 3	K
9.0	33 8.2	52.8	
8.8	13.1	54.5	R
9.0	39.3	6.2	R
9.0	35 9.7	18.2	K
8.5	16.2	22.7	K
9.5	26.1	27.9	
9.5	26.6	32.8	
9.3	36 2.6	41.5	
8.3	7.3	25.4	Kb
9.0	33.2	22.4	
8.5	34.7	51.2	B
9.3	43.7	32.3	B
9.4	43.8	46.1	
9.5	37 36.2	51.2	
9.5	38.7	59.4	
9.5	41.5	4.0	
9.5	38 22.7	54.9	
8.0	37.3	24.1	B
7.8	50.8	15.1	K
8.2	39 0.5	7.8	K
8.7	9.9	57.5	K
9.0	32.2	23.8	K
9.0	42 9.4	56.8	
9.5	43 17.0	54.0	
9.5	57.5	1.2	B
9.5	44 14.6	28.0	
7.2	14.8	51.0	K
9.5	24.1	37.0	
9.5	54.6	30.0	
9.0	45 25.7	20.3	
9.5	27.6	47.7	
8.5	46 19.5	27.2	
9.2	26.4	54.9	
9.0	40.1	43.2	
8.5	48.1	26.5	K
9.0	47 12.0	17.2	K
8.5	38.8	6.9	K
8.0	47.9	49.6	L
9.5	49 56.4	39.0	b
9.5	51 14.8	46.1	
9.4	52 22.9	53.9	
9.3	34.0	51.0	Kb
8.7	45.8	9.9	
9.3	53 24.0	39.1	K
10 pr.	+ 30.59	− 3.29	

2721—2780

m	12ʰ—13ʰ ′ ″	+3° ′	
9.5	53 48.8	25.8	
9.5	59.0	9.7	
9.0	54 9.3	42.4	K
9.5	35.8	37.1	
9.5	40.7	50.2	
9.5	56 0.3	53.8	
9.2	6.5	2.7	
9.0	48.7	59.6	K
9.2	57.0	24.1	Kb
9.5	57 24.4	2.9	
9.5	32.7	41.8	
9.5	53.6	45.2	
9.2	53.7	10.9	K
9.5	58 35.3	27.5	
9.2	52.6	29.3	K
9.5	0 8.1	55.0	
9.5	22.7	33.5	
9.5	1 27.0	38.0	K
7.7	46.3	54.9	K
8.3	4 2.9	55.6	K
9.2	22.5	9.0	
8.3	5 0.1	26.8	K
9.5	14.7	30.0	
9.5	17.1	2.1	
8.7	38.4	2.8	K
9.5	6 19.3	48.1	
8.8	8 3.0	59.9	K
7.7	11.4	49.1	K
9.5	38.1	26.4	
9.2	9 40.1	12.3	b
9.5	58.7	46.7	
9.5	10 31.1	7.2	
9.2	11 20.7	21.3	a
9.2	20.8	44.2	K
8.5	31.3	18.2	
8.7	45.3	54.4	K
8.5	47.0	40.4	K
7.0	13 20.6	43.2	Kb
9.5	14 0.0	6.3	
9.5	8.3	22.7	
8.0	15.6	36.6	K
8.0	40.6	32.1	K
9.5	15 5.3	46.3	B
9.0	7.9	11.6	
8.5	16 17.3	27.9	K
8.5	18.1	28.3	K
9.2	42.7	19.2	
9.4	53.3	46.0	
9.5	17 18.7	37.3	
9.5	30.6	28.2	
9.2	34.5	56.8	
9.0	18 46.0	38.7	Kb
9.0	19 23.2	53.7	K
9.5	24.0	16.1	
9.5	30.8	59.4	
9.2	20 18.7	46.7	K
9.0	21 8.3	54.6	K
9.3	21.7	23.8	b
9.3	39.3	44.2	
9.5	46.9	8.9	
10 pr.	+ 30.48	− 3.19	

2781—2840

m	13ʰ ′ ″	+3° ′	
8.8	21 57.7	59.6	K
9.3	22 34.7	30.7	
8.9	23 9.6	40.4	K
9.3	44.9	5.1	
9.3	55.4	10.2	K
9.5	24 15.5	6.5	
9.2	15.7	50.1	K
9.5	50.3	21.5	
9.5	25 6.0	25.3	
9.3	8.7	30.7	
9.5	20.9	1.0	
8.7	26 28.1	52.5	K
9.5	58.9	1.3	
9.5	28 13.0	40.4	
8.5	33.6	26.1	K
9.5	57.9	2.6	
9.4	29 54.4	45.7	B
9.5	30 6.1	25.8	
7.0	22.4	6.9	K
9.5	28.1	11.2	
9.5	30.4	4.7	
9.0	31 6.5	3.7	K
9.5	9.7	23.4	
9.5	32 20.9	2.5	
9.5	24.1	57.7	
9.2	25.2	17.0	aB
9.3	34.3	24.1	
9.5	33 40.3	30.0	
9.3	34 51.3	2.8	Kb
9.5	35 15.7	44.3	
9.5	17.3	26.5	
9.0	22.7	19.2	
9.5	36 11.2	58.7	
9.5	37 2.0	39.0	
9.3	44.5	59.3	
9.5	38 33.1	50.8	
9.5	41 29.1	56.8	
9.5	42 28.5	25.5	B
8.7	43 6.0	14.4	K
9.3	10.5	24.5	Kb
9.5	43.0	46.7	
9.0	47.3	58.2	
9.3	44 56.5	34.2	
9.0	46 12.5	24.8	
8.3	50.4	52.4	K
9.5	47 14.8	26.3	B
9.0	29.0	43.5	
9.5	39.2	17.5	
8.2	57.1	59.1	K
9.4	48.6	23.2	B
9.0	48 48.0	31.7	K
8.8	49 16.1	6.7	K
9.5	17.7	12.0	
7.2	21.0	41.5	Kb
9.5	50 4.0	17.1	
7.7	48.0	29.6	K
9.5	52 25.7	5.3	
9.5	38.5	13.0	
7.5	53 1.0	23.0	K
9.5	46.7	52.4	
10 pr.	+ 30.39	− 3.06	

2841—2900

m	13ʰ—14ʰ ′ ″	+3° ′	
9.5	54 21.0	12.3	
8.6	23.1	23.5	
9.2	24.6	55.5	
9.5	55 25.3	17.9	
9.4	56 5.6	51.7	B
9.0	22.4	24.2	
7.9	59.4	18.4	L
9.4	57 25.4	13.8	
9.5	27.9	10.8	
9.3	34.6	28.5	
8.9	58 40.8	55.9	K
9.3	43.1	53.0	a
9.3	50.5	0.7	
9.0	53.9	57.9	B
9.4	59 0.9	55.8	a
9.4	19.3	2.0	
9.3	0 34.2	27.1	
9.3	1 2.1	25.2	
7.0	2 8.9	28.9	K
9.5	28.7	7.3	
9.5	55.2	59.0	
9.5	3 21.0	22.4	
8.8	30.1	45.4	
9.5	4 8.2	51.0	
9.5	15.4	25.2	
9.5	52.7	16.2	
8.8	56.5	5.5	K
9.5	5 16.0	5.8	
9.5	56.4	57.9	
9.5	6 13.2	58.7	
9.5	7 18.1	1.1	
8.5	18.3	10.4	
8.1	43.9	28.7	L
7.5	8 1.9	48.1	K
9.2	23.9	43.2	
9.2	27.5	19.8	
8.0	9 40.6	45.7	
9.5	12 7.0	7.2	
9.3	8.7	15.5	Bb
9.2	46.5	52.7	b
9.5	14 30.3	3.1	
9.3	35.4	2.8	
8.9	15 10.5	25.2	K
9.5	55.8	26.2	
9.0	16 59.5	27.2	
8.7	17 20.5	11.4	K
9.5	24.0	1.6	
9.5	34.3	13.3	
9.5	18 21.0	52.2	
9.0	26.4	11.7	
9.0	19 8.5	44.7	
9.5	19.6	4.9	
8.9	20 32.8	2.3	
9.0	39.6	28.1	
9.5	56.3	15.0	
7.3	21 15.1	25.8	L
9.5	26.7	57.4	
9.5	23 0.5	56.4	
9.5	24 37.0	50.9	
9.0	25 14.9	46.9	B
10 pr.	+ 30.29	− 2.84	

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	14ᵐ		+3°			14ᵐ—15ᵐ		+3°			15ᵐ		+3°			15ᵐ—16ᵐ		+3°			16ᵐ		+3°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	26	24.7	37.7		9.5	51	22.8	31.0		9.3	17	6.9	1.9	*B*	9.5	38	32.0	25.1		8.6	3	51.0	17.8	K
9.5		25.0	43.3		9.5		33.5	24.6		9.5		9.5	41.9		9.5		44.7	36.2		9.5	4	2.7	48.7	
8.7		34.3	12.9	*B*	9.5		51.8	5.4		9.3		10.5	35.3		9.4	39	5.3	21.4		9.2		59.0	57.6	*Kb*
9.5		38.4	15.6		9.5	52	40.8	56.5		9.5		50.2	37.2		8.9		56.7	39.0	*Kb*	9.2	5	0.9	17.1	
8.8		38.8	58.2	K	9.3		56.1	50.6		8.8		58.5	43.4	K	9.5	40	45.0	56.9		9.5		37.3	10.3	
9.3	27	2.3	11.0		7.3	53	45.2	28.3	K	9.3	18	39.5	28.7	*a*	8.6		53.5	53.4	K	9.5		39.2	25.1	
9.4		14.8	49.0		9.3	54	8.3	16.7	*R*	9.5		43.7	55.1		8.0	42	36.7	13.6	K	9.5		40.9	35.9	
9.5		15.6	45.0		8.4		36.6	55.7		9.5	19	8.8	27.3		8.8	43	41.7	18.9		9.5		48.4	55.0	
8.5	29	26.3	28.3	K	9.1	55	25.1	2.4	K	9.5		53.2	25.2		9.3	44	19.6	56.7		9.5	6	57.9	58.1	
9.5		54.8	36.7		9.1		43.8	44.0	*b*	9.5		53.5	46.4		9.5		27.7	19.5		9.5	7	4.4	49.1	
9.0	30	6.9	40.7		9.5		47.0	2.0		9.1		59.8	35.3	K	9.4		32.2	44.8		7.5		6.0	2.0	K
8.8		31.1	57.1	K	9.5	58	16.7	12.7		9.5	20	23.9	6.3		9.5		55.0	39.7		9.3		9.1	8.0	*R*
9.5		39.4	16.0		9.0	59	6.3	13.1		9.5		48.1	25.7		9.5	45	28.5	42.4		9.5		20.9	38.7	
9.5	31	11.4	21.1		7.7		10.5	34.4	K	8.2		56.1	22.1	K	9.4	46	15.7	35.8		9.3		33.9	25.1	*R*
9.5		38.0	59.6		9.0		14.8	11.4		9.5	21	2.9	58.6		9.2		37.0	22.2	*b*	9.5		49.7	54.9	
8.9		56.8	6.0	*Kb*	9.5		23.5	49.9		9.5		3.8	43.4		7.8	47	8.7	43.1	K	9.5		59.0	21.6	*R*
9.2	32	15.4	32.7		9.3		42.7	2.2		9.5		8.4	58.1		9.5	48	11.7	28.1		8.8	8	36.9	25.8	K
8.8		15.8	43.2	K	9.5		50.2	18.3		8.8		15.8	36.4	K	9.3		20.0	14.5		9.5	9	34.4	20.2	
9.2		44.9	22.2		9.5	0	6.0	1.7	B	8.6		30.7	56.8	K	8.5		40.7	16.8		9.0	10	20.2	23.9	
8.9		59.1	40.3	K	9.5		10.5	50.9		9.0		48.0	33.2	K	9.5		53.3	27.5		9.2		20.4	3.2	
9.5	33	40.1	33.6		9.3		12.2	9.9		9.5	22	19.1	15.2		9.5	49	11.7	49.4		9.5		28.7	59.9	
9.2	34	40.6	39.6		9.5		19.8	46.8		9.5		42.8	19.7		9.5		31.6	30.7		9.3	11	29.9	25.8	
9.3		47.4	36.7		9.5		40.8	50.0		9.5	23	22.1	32.2		9.5		57.7	20.7		9.5		40.4	47.0	
9.1	35	1.0	45.9	*b*	9.2	1	12.2	43.3	*Kb*	9.5		28.5	53.1		7.3	50	0.6	49.0	*Kb*	*9.5	12	0.3	49.4	
9.4		6.3	57.1		9.5	2	11.8	52.4		9.3	24	0.2	13.1	*aRb*	8.9		28.0	47.6	L	9.5		16.9	25.8	
8.8		38.4	17.0	K	9.5		23.5	24.6		9.5		5.5	36.0		9.5		48.8	8.0		8.5		29.8	15.3	K
9.5		43.4	21.8	K	9.5		40.8	5.0		9.5		33.5	13.0		9.3		59.7	14.6	*R*	8.7		30.0	1.6	L
9.3		48.2	42.1		9.0		47.6	50.4		7.7	26	2.8	48.6	*Kb*	9.5	51	26.9	5.2		9.2		49.1	27.5	*aB*
9.5	36	48.4	32.0		9.0	3	29.2	14.5	K	9.5		16.6	0.2	*R*	9.1	52	21.6	51.7	*b*	9.5		50.3	51.5	
8.8	37	13.7	57.2	K	9.3	4	3.4	5.4		9.1	27	1.8	13.5	K	9.5		31.0	17.7		8.9	13	10.4	14.0	K
9.5		20.5	19.4		8.8		9.7	45.1	K	9.3		13.8	35.7		9.5	54	38.8	25.0		9.0		33.1	5.2	K
9.0		48.0	55.7	*Kb*	8.0		13.2	22.6	K	9.5		36.8	14.5		9.5		45.0	57.4		9.5		49.8	11.0	*R*
9.0		59.9	15.2	K	9.4		23.2	51.9	B	9.3	28	9.1	47.5		9.5		49.7	9.5		7.0	14	59.9	13.9	K
9.5	38	29.2	51.4		9.5	5	30.5	31.6		9.3		25.6	10.2		9.5	55	0.8	17.5		7.4	15	3.9	25.8	K
8.9	39	17.1	38.0		9.5		35.9	25.3		9.5		58.2	34.0		9.5		4.7	27.5		9.0		6.8	49.7	
9.5		21.2	47.8		9.5		54.2	11.1	K	9.0	29	5.8	24.3	K	9.1		14.0	10.3	L	9.5		14.3	8.2	
9.5		28.5	28.8		9.5	6	0.4	32.4		9.5		42.8	58.6		8.6		18.9	4.1	L	9.5		26.9	25.7	B
8.2	40	0.9	19.4	K	9.5		7.8	43.7		9.5	30	23.8	32.1		9.5		21.0	35.5		9.5		30.4	13.3	
8.4	41	12.5	53.9	*Kb*	8.9		37.8	13.4	K	9.5		33.9	4.2		9.0	56	53.2	36.1	K	9.2		33.2	5.3	
9.5		19.5	29.7		9.5		40.5	49.1		9.3	31	46.2	31.7		9.0		56.7	11.2	K	9.5		45.6	28.0	
9.5		37.1	28.8		8.8	7	9.8	45.4	L	7.7		46.7	56.7	K	8.7	57	48.7	25.1	K	9.5		46.9	34.8	
8.7	42	1.5	28.2	K	9.5		11.5	17.5		9.5		58.0	39.3		8.5		53.6	27.5	K	9.5	16	45.0	37.0	
9.3		4.8	54.4		9.0		53.5	51.2		9.5	32	7.0	29.4		9.4	58	14.3	7.0		9.3		53.8	20.7	B
9.5		42.6	49.7	*a*	9.0	8	11.1	34.3		9.5		9.8	9.8	*R*	9.0		27.3	19.2	K	9.1		56.2	46.5	
9.1	43	12.7	5.4		9.5		44.8	37.4		9.5		41.2	7.1		9.5	59	45.7	1.7		9.2		59.9	47.9	
9.1		25.5	0.7	K	9.3	9	32.5	13.4	*b*	8.6		47.7	2.2	K	9.4		48.5	54.2		9.4	17	4.6	3.8	B
9.3		44.7	56.8		9.5	10	43.5	22.5		9.0		48.7	46.2		9.4	0	5.9	3.1		9.1		4.9	39.9	K
8.7	45	49.6	19.5	K	9.5	11	14.7	8.4		9.0		51.8	20.1		8.1		14.3	46.4	K	9.5		13.2	6.8	B
8.7	46	20.7	9.6	K	8.4	12	27.4	51.5	K	9.2	33	6.5	4.7	K	8.7		46.8	6.4	K	9.5		30.8	25.7	B
9.4		25.9	31.5	B	9.5	13	5.4	9.3	*b*	9.3		43.0	20.5		9.5	1	20.9	7.7		9.0		37.0	6.5	K
8.8		33.6	22.6		9.3		16.7	51.4		9.5		47.3	45.2		9.1		36.3	11.9	K	9.4		39.7	45.3	
9.0		33.6	50.1		9.5		22.5	39.5		9.5		47.5	27.1		6.3		45.2	50.4	L	9.4		40.3	21.0	
9.0	47	10.3	29.0		9.3	14	17.5	43.9		9.5		49.7	1.1		9.5	2	16.3	29.5		9.1	18	26.7	56.7	*b*
9.0		36.3	34.5		8.8		30.7	53.3	K	9.5		50.5	23.0		8.8		26.0	18.8	K	9.4		46.9	32.3	B
8.5		37.9	0.7	K	9.5		53.6	1.0		9.4	35	1.4	59.3		9.2	3	4.4	13.7		9.4	19	0.6	5.4	
7.2	49	1.2	59.4	K	9.5	16	3.6	9.3		9.2		4.0	40.4	K	9.5		28.9	16.1		9.5		9.9	49.4	
8.2		12.8	30.8	L	9.2		5.6	4.5		9.1		7.0	46.7	K	9.5		32.2	9.5	*B*	9.5		14.3	1.2	*R*
9.5		47.0	6.0		9.5		44.7	1.2		8.7		18.7	57.4	K	9.5		40.4	17.4	B	9.3		29.1	53.9	
9.5	50	2.1	21.9		9.0		57.7	23.9	K	9.5	36	50.9	4.5		9.5		41.5	6.5		6.8	20	16.4	11.9	K
9.4		47.1	7.0		8.7	17	2.5	18.3	*Kb*	7.0	37	16.0	50.0	K	9.2		48.3	11.0	*aB*	9.5		28.4	55.3	
10 pr.		+	*30.20*	− *1.59*	*10 pr.*		+	*30.12*	− *2.32*	*10 pr.*		+	*30.08*	− *2.07*	*10 pr.*		+	*30.02*	− *1.75*	*10 pr.*		+	*29.99*	− *1.50*

3163 a

9.2	11	49.5	21.2	B

16ʰ – 17ʰ **+3°**

3201—3260				3261—3320				3321—3380				3381—3440				3441—3500			
	16ʰ		+3°		16ʰ		+3°		16ʰ—17ʰ		+3°		17ʰ		+3°		17ʰ		+3°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
9.0	20	43.4	44.6		9.5	37	14.7	59.4	B	9.5	54	8.1	54.9		9.5	11	59.0	21.0		9.2	25	51.4	23.1	K
9.4		56.9	52.9	R	9.5		28.5	5.5		9.5		18.0	52.5		9.5	13	19.0	3.3		9.0	26	17.0	9.3	
8.9	21	21.8	36.2	K	9.5		43.8	52.3		9.5		24.1	36.1		8.8		28.2	28.5	L	9.5		30.5	8.6	
9.2		48.8	8.5	K	9.5		50.6	27.5		9.5		51.5	32.3	B	8.7	14	0.1	57.9	K	9.4	27	14.6	47.7	
8.9		55.4	50.5		9.3	38	29.0	9.2	R	9.0	55	7.7	25.1	R	9.5		8.4	42.1		9.2		15.6	40.7	aB
9.4		57.5	5.2		9.1		40.6	2.9	Rb	9.5		20.0	48.0	B	8.8		17.5	5.9	K	9.3		18.0	40.0	aB
9.5	22	7.4	12.9		9.5		50.7	53.4		9.5		22.4	2.1	B	9.5		24.3	16.5		9.5		23.9	46.2	
9.5		9.3	43.9		9.4	39	44.5	38.5	B	9.2		27.8	11.9	a	9.4		25.4	25.8		9.5		27.4	54.8	
9.4		51.4	7.4		9.4	40	0.5	40.0		8.9		28.8	35.4	K	8.5		39.3	27.2	L	9.0		32.6	2.3	K
9.2		52.2	51.5	B	9.4		1.4	13.0		9.1		32.1	49.2	aB	8.5		45.0	9.2	K	8.5		38.9	27.2	
9.4	23	51.0	35.9		9.5		5.6	29.3	B	9.5		32.5	59.4	B	9.5		47.4	28.3		8.7		40.0	59.7	L
9.5	24	27.9	18.8		9.5		13.3	50.3		9.4	56	6.7	40.3		9.2	15	22.8	13.4		9.5		41.0	39.9	
8.0		49.9	39.7	K	9.5		30.1	52.5		9.5		44.8	24.1	k	9.1		32.4	44.9	K	9.5		42.5	35.6	
9.5	25	3.4	44.4		9.4	41	8.0	3.6	R	9.3	57	17.8	59.3		9.5		38.1	52.2		9.5	28	7.1	40.7	
9.0		40.5	33.8	K	9.4		13.1	54.3		8.1		40.3	58.6	Kb	9.3		57.4	4.2		9.0		13.8	26.6	
9.5	26	18.9	23.8		9.5		26.3	5.4	B	9.2		48.1	6.0		9.3	16	47.2	1.7		9.2		47.4	30.7	
9.5		52.4	25.8		9.1		47.1	47.6		9.5		59.7	7.7		8.5		48.3	13.3	Kb	9.5	29	1.7	48.0	
9.4	27	4.4	16.9	R	9.4		49.0	59.0		7.3	58	11.7	38.2	K	9.5		49.8	23.8		9.0		8.2	9.9	K
9.4		18.9	46.3		9.2		49.1	29.9	b	8.6		15.8	2.2	B	9.5	17	4.8	43.0	B	9.0		50.4	23.4	
9.5		19.4	57.6	B	9.5		52.8	53.0		7.7		21.6	58.2	K	9.4		12.8	52.3	B	9.5	30	14.1	17.5	
9.5		23.8	34.1		9.4	42	23.7	53.6		9.5		24.0	27.6	B	9.2		28.4	5.6		9.5	31	5.7	54.5	
9.3		25.7	53.7	B	9.5		36.1	13.3		9.5		28.1	43.4		9.4		34.5	32.8		9.5		5.9	2.6	
9.0		34.9	9.2	K	9.5		59.2	2.3		9.3		37.0	53.4	a	9.1		52.9	57.1		9.2		31.5	54.9	
9.1		42.3	8.0	K	9.5	43	0.4	39.6		9.5	59	11.3	55.0		7.5	18	16.1	27.2	Kb	9.3		48.4	31.3	aB
9.5		48.2	54.8	B	9.5		9.0	13.6		8.0		16.4	50.1	K	9.2		50.4	28.9		6.5	32	6.2	39.0	Lb
9.5		49.7	48.7		9.5		16.6	57.4		9.5		28.7	45.1		8.5		50.7	50.9	K	7.2		16.7	29.2	L
8.8		56.6	5.3	K	9.5		21.7	49.0		*9.5	0	9.7	27.1		9.5	19	10.1	48.6		9.3		23.7	36.9	
9.2	28	15.5	59.0	R	9.4	44	2.4	30.9		9.0		9.8	16.0		9.3		39.6	55.1	B	9.5		30.0	53.6	
9.5		28.0	6.4		9.0		11.5	26.0	K	9.0		16.1	51.2	K	9.5		53.8	40.7		8.8		57.5	18.9	K
9.5		54.0	52.8		9.1		12.8	10.1	R	9.5		29.7	33.4		9.5		56.0	55.5	B	9.5	33	3.8	29.7	
9.3		57.0	59.0		9.5		59.0	57.9		9.5		37.4	40.7		9.5	20	6.5	54.2		9.5		10.4	58.8	
9.3	29	30.9	38.0	R	9.5		59.9	58.8		8.8		46.2	3.6	R	9.2		7.4	5.3		9.4		40.6	21.1	B
9.0	30	30.9	23.7		9.5	45	11.7	56.0		9.5		48.3	26.7	R	9.0		9.4	19.6		9.5		41.4	24.8	
9.5		59.0	56.0		9.4		12.0	16.7	R	9.5	1	31.4	33.7		9.2		12.7	1.2		9.5		48.4	50.5	
9.5	31	11.9	3.2		9.4		14.6	46.1	B	9.5		34.4	9.4		9.3		21.6	18.3	aB	9.3		55.7	9.9	K
9.2		26.8	30.7	aR	9.5		28.1	58.0		8.2		46.8	57.1	K	9.5		26.5	45.9		9.5	34	14.1	13.0	
9.5		50.0	56.5		9.4		46.8	10.3		8.9		57.7	2.7	K	9.4		32.1	37.6		9.5		25.0	24.1	
8.7	32	0.5	59.9		8.2	46	0.1	15.0	K	9.3	2	30.0	50.2		8.4	21	21.8	44.1	K	9.5		50.3	22.3	
9.5		7.7	27.5		9.5		32.5	40.0		9.5		44.1	59.9		9.0		35.7	13.3		9.5	35	17.8	26.5	
8.3		10.0	41.2	K	9.2	47	40.0	50.4	a	9.4	3	16.0	58.1		8.8		37.2	54.4	K	9.5	36	16.7	43.1	R
9.5		40.4	55.3		8.3		40.1	54.1	K	8.5		42.7	13.6	K	9.1		46.8	10.6	K	9.5		19.8	14.0	
8.9	33	20.3	3.4	K	9.5		50.8	3.4		9.3	4	22.6	5.6	a	9.2	22	0.5	47.3	K	9.1	37	6.3	48.7	
8.5		42.1	54.9	K	9.5	48	50.0	57.9		9.5		59.2	2.4		8.2		15.4	7.9	K	8.6		9.1	2.3	S
8.8		46.9	16.1	K	9.5	49	12.4	9.8		9.1	5	4.8	15.0	K	9.5		30.8	2.8		9.3	38	8.0	54.4	
9.5		52.0	6.6		9.2		19.1	47.5		9.4		25.1	37.3		9.5	23	35.4	17.5		9.0		15.9	32.8	
9.5		55.4	53.7		8.7		26.4	53.5	K	9.5	6	6.4	10.7	B	9.0		37.6	55.8		9.2		38.9	37.0	K
9.5	34	24.4	55.2		9.4		54.0	57.9		9.5		34.5	55.0		9.5		49.0	53.4	B	9.5	39	22.9	12.5	
9.4		42.9	2.9	R	9.0		54.7	23.9	K	9.5	7	16.1	27.5		8.7		57.9	43.2	K	9.5		29.5	2.1	
9.4	35	7.1	30.9	aB	9.5		58.4	13.6		9.3		28.8	24.2	B	9.3	24	3.8	12.0		9.5		38.1	9.9	B
9.4		10.4	13.3	R	9.5	50	14.1	8.6		8.5		51.8	35.6	B	9.5		23.4	47.7		9.2		42.0	49.0	
9.0		16.3	6.9	R	9.4		18.7	32.3		9.0		57.1	55.9	Kb	9.5		31.1	25.5		9.0	40	42.7	38.2	K
9.5		25.5	56.0		9.3		35.7	34.0	R	9.1	8	26.4	55.1	K	8.8		31.1	2.1	B	9.1	41	7.8	44.8	K
9.5		32.4	38.3	B	9.5		38.1	43.4		9.2		57.6	40.7		9.5		36.6	55.7		6.9		8.0	51.9	K
7.8		49.0	44.2	K	9.4	51	20.2	12.6		9.5	9	14.2	7.8		9.2		37.5	9.4	B	9.5		33.2	39.0	
9.2	36	16.4	40.8		9.5		59.3	43.4		8.2		23.7	34.1	L	9.5		54.4	16.1		9.1		48.4	9.0	
9.2		16.9	6.9		8.6	52	1.4	7.5		8.7		29.4	8.8	K	8.1	25	7.4	23.4	Kb	9.5	42	6.8	26.2	
9.4		43.9	7.6	B	9.5		12.1	50.7		8.5		56.9	51.5		9.2		7.6	43.5		9.5		19.1	36.1	
9.5		54.5	38.3		9.1	53	20.7	19.9	Rb	9.5	10	48.1	58.7		9.4		38.4	37.7		9.5		22.4	26.7	
9.4	37	1.4	34.5	R	9.5		33.7	26.4		7.0		50.4	18.2	L	8.7		47.1	32.4	L	9.5		23.0	7.4	
9.5		6.6	58.1	B	9.5	54	6.8	12.2		9.5	11	51.1	47.7		9.0		47.9	2.3	K	9.0		27.3	5.1	K
10 pr.		+ 29.97	− 1.29		10 pr.		+ 29.95	− 1.07		10 pr.		+ 29.93	− 0.86		10 pr.		+ 29.91	− 0.58		10 pr.		+ 29.90	− 0.39	

33 46 a				
9.5	59	48.5	26.5	R

3501—3580					3561—3620					3621—3680					3681—3740					3741—3800				
	17ʰ		+3°			17ʰ—18ʰ		+3°			18ʰ		+3°			18ʰ		+3°			18ʰ		+3°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.2	42	36.1	1.3	K	9.1	54	9.1	2.1		9.5	3	42.4	55.3		9.4	13	40.3	55.3		9.5	26	5.4	36.3	
9.5		45.4	51.8		8.7		13.8	48.0	K	9.5		48.6	13.7	*a*	9.5	14	15.3	6.6	B	9.0		29.1	11.0	
9.5		53.8	4.3		9.5		16.6	49.4		9.1		52.0	15.3	K	9.5		26.3	35.7	B	9.5		56.7	35.5	
9.3		57.6	45.2		8.2		18.8	32.4	*B*	9.5	4	23.5	36.5		9.4		29.4	2.5		9.5	27	0.4	39.7	
8.6	43	7.3	55.6	K	8.2		22.8	30.8	B	9.5		28.0	13.5		9.5		31.5	5.2		9.4		11.9	58.2	
9.5		20.8	30.7		8.8		23.0	57.5	K	9.0		33.6	3.0		9.4		46.1	50.7		8.1		13.1	43.5	B
9.5		54.3	21.7		9.5		28.6	8.8		9.4		34.2	35.9		9.0	15	5.8	49.7	K	7.5		20.4	1.8	K*b*
9.5	44	15.8	27.2		9.2		37.3	48.1	B	8.9	5	15.0	55.7		9.5		19.3	57.5		9.5		24.6	46.3	
9.3		21.9	52.5		8.9		54.2	3.3	K	9.3		40.6	33.4	B	9.5		30.6	57.6		9.3		27.6	59.4	
9.4		36.1	3.1		9.2		56.2	6.4	K	9.5		45.6	37.4		9.5		32.9	34.1		9.5		57.1	21.1	
9.5	45	7.8	26.9		9.0	55	5.9	3.2		9.5		56.3	44.4		9.5		44.7	32.1		8.9	28	30.3	57.0	
7.9		11.1	2.6	*B*	8.2		20.9	27.2	K	9.3	6	0.9	0.2		9.5		55.3	17.6		9.5		44.3	13.5	
9.5		14.3	39.3		9.3	56	0.4	9.5	B	9.0		13.1	34.9		9.4	16	6.0	26.0		9.5	29	5.0	9.2	
8.9		34.4	50.4	K	8.6		14.0	51.1	B	9.1		24.7	17.7		9.5		12.7	56.0		9.5		33.6	28.0	
9.3		35.5	35.0	B	9.2		42.3	33.8	K	9.5		39.9	30.0		8.2		16.1	1.7	L	7.6		41.7	40.8	*B*
9.3		42.2	10.6		9.5	57	5.8	16.5		9.5		49.0	37.8		9.4		25.0	37.0		9.5		41.8	12.3	
9.0	46	4.7	38.0		9.0		8.2	37.6	K	8.7		50.4	40.9		9.1		59.1	51.2	K	8.0	30	11.3	6.1	*B*
9.3		17.3	6.4		8.5		8.9	30.7	K	9.3		56.7	34.3		8.9	17	2.6	34.7	K	8.6		17.5	4.1	
9.5		20.9	11.5		8.0		28.0	48.0	K	9.5	7	8.5	37.2		9.1		2.8	42.1	K	9.4		19.4	34.5	
9.5		21.9	6.6		8.8		35.6	32.1	K	8.9		16.6	44.7	K	9.2		12.4	25.4	K	9.4		22.5	37.3	
9.5		30.5	14.5		9.2		41.8	14.0		9.0		18.9	38.0		9.4		12.5	39.6		9.3		22.7	24.7	
9.2		42.7	14.1		8.5		50.9	55.2	K	9.2		28.8	1.9	K	9.5		25.3	55.0		9.5		27.2	19.9	
9.5		54.6	15.2		9.5		58.4	28.8	B	8.2		40.0	37.6	K	9.4		33.7	6.0	B	9.4		48.5	3.7	B
9.5	47	2.6	54.5		9.4	58	8.2	24.5		9.5		53.9	24.5		9.5		52.3	36.5	B	9.4		57.2	30.1	B
9.0		6.3	29.9	K*b*	9.5		24.4	43.7		9.5	8	3.3	3.2		8.1		52.5	25.2	K	9.5	31	53.3	33.2	
9.2		8.3	35.3	K	9.3		49.3	40.6		9.5		4.7	33.6	B	9.4	18	3.1	33.8	B	9.4	32	15.9	39.7	*a*
9.5		14.8	23.4		9.3		57.2	3.0		8.7		11.5	27.8	K	9.5		8.9	39.0		9.4		37.2	39.7	K
7.5		16.0	46.0	K	9.3		59.3	23.9		9.3		13.5	33.1	B	9.5		19.7	37.9		9.5		45.8	8.9	B
*9.5		33.9	56.3		9.3	59	13.0	3.5		9.5		23.6	57.8		9.4		49.5	15.1		8.6		50.7	13.2	K*b*
*9.5	48	2.8	16.1		9.5		14.8	12.4		9.3		32.3	56.9		9.5	19	4.4	30.8		9.5	33	10.7	4.0	
9.4		4.3	57.1	B	9.5		17.2	30.8		9.4		51.9	7.8		9.5		13.0	4.5		9.4		21.5	58.5	
*9.4		42.3	3.0	*a*	9.4	0	3.1	58.3		9.5		52.2	12.5		9.5		27.1	40.1		9.5		56.4	25.3	
8.1		43.8	47.3	L	9.5		9.7	48.2		9.5		54.5	16.6		8.2		40.4	49.7	K	9.5	34	2.0	42.9	B
8.0	49	1.6	1.3	K	9.1		21.3	34.0	*a*B	9.5		58.6	10.6		9.5		58.6	37.3		*9.5		6.8	6.6	
9.5		6.7	58.7	R	9.4		21.6	33.0	*a*	*9.5	9	11.5	14.7		9.5	20	9.1	50.0		*9.4		21.6	14.6	
9.5		24.3	35.7		9.0		26.8	16.3		8.6		23.5	38.6	K	6.7		37.4	39.7	K	9.5		51.3	32.0	
9.5		29.7	34.1		8.7		35.8	40.9	K	9.2	10	13.8	44.5		9.3	21	5.0	1.6		8.1		53.7	54.0	K
9.5		36.0	52.5		8.7		43.9	35.4	K	9.5		16.7	55.1		9.4		7.1	56.3		8.5	35	9.4	21.4	K
9.5		48.1	13.3		8.7		44.0	36.1	K	9.1		31.3	53.8		8.5		7.9	52.7	K	9.5		14.1	4.5	
9.5	50	15.8	4.8		9.4		50.6	37.5		9.4		31.7	41.9		8.5		10.0	41.6	K	9.4		30.4	4.7	
9.0		24.7	24.1		9.4	1	2.0	51.0		9.2		40.4	5.0	K	9.1		21.5	37.4	K	9.5		34.1	57.5	B
9.1		46.3	15.0		9.4		5.1	41.7	*a*B	8.8		43.9	26.1	L	9.5		37.3	50.7	B	9.5		49.3	22.6	
9.4		48.3	45.5	B	9.0		15.9	23.9		9.1		50.2	56.4		9.5		38.5	9.8	B	9.4		59.6	34.0	*B*
9.0		58.4	40.7	K	9.5		18.3	1.3	B	9.4	11	2.7	30.9		9.4		48.8	48.2		7.9	36	12.7	39.0	L
9.4	51	1.8	48.4		9.3		21.7	10.0		9.4		13.3	55.0	B	9.5		59.7	17.0		9.5		24.2	29.3	
8.7		3.1	56.8	K	9.3		28.9	35.9	K	9.5		26.8	56.2	B	9.5	22	46.1	32.5		9.5		41.0	37.7	
9.5		6.7	2.3		9.5		40.3	28.0		9.4		34.6	59.9		7.0		53.2	58.4	K	8.6		45.2	12.6	
9.4		35.0	50.8		9.5	2	0.1	36.5	B	9.2		51.8	8.5	K	9.5		56.6	17.6		9.2		46.6	3.0	
9.5		47.4	0.5		8.8		14.2	6.2	B	9.4	12	5.2	2.8		7.8	23	34.4	3.6	B*b*	8.9		49.9	10.0	
9.3		54.8	4.6		6.2		21.3	58.0	L	9.0		6.4	12.7	K	9.3		44.0	28.1		9.5	37	43.3	12.5	
9.5	52	24.8	52.2		7.9		24.8	40.2	K	9.2		13.1	16.2	K	9.5	24	7.4	16.6		9.4	38	9.1	56.9	
9.2		25.1	57.4	K	8.0		33.2	11.4	K	9.5		17.5	9.7		9.4		14.8	19.5		9.4		21.4	10.9	
9.3		35.4	2.8		6.5		39.3	6.9	K	9.2		43.6	48.0	*b*	9.3		16.6	26.0		9.5		37.6	39.5	
9.0		37.8	22.0		9.4		42.5	37.6	B	8.6		43.7	30.4	L	9.3		17.0	35.3		9.2		48.9	27.4	K*b*
9.5		40.8	22.7		9.3		58.2	50.6		9.5		58.3	54.8		9.5		28.0	37.1		9.5	39	2.0	52.4	
9.1	53	21.9	50.6	B	9.5		58.9	23.8		9.4	13	11.7	33.3		8.8		43.2	44.9	K	9.4		5.3	28.6	
9.0		26.2	12.0		9.3		59.9	23.0	B	9.5		26.8	52.1		6.7		53.3	34.1	K	9.4		32.7	39.8	
8.5		44.8	21.0		9.3	3	15.1	58.3		9.1		27.3	19.5	R	9.5	25	3.9	40.8		9.5		35.7	17.8	
9.5		47.9	34.1		8.8		20.3	47.4		8.7		33.4	4.7	K	8.1		55.5	51.2	K	9.0		48.4	35.9	K
9.5	54	3.7	23.8	*a*	6.0		26.2	17.7	K	5.5		38.2	19.1	K	9.5	26	4.2	50.2		9.5	40	0.7	45.2	
10 pr.			*29.90*	*0.17*	*10 pr.*			*29.90*	*0.01*	*10 pr.*			*29.90*	*0.13*	*10 pr.*			*29.90*	*0.28*	*10 pr.*			*29.91*	*0.48*	

3529 a										*3654 a*										*3774 a*				
9.5	*47*	*50.8*	*12.9*							*9.6*	*9*	*9.7*	*39.6*	*B*						*9.7*	*34*	*9.5*	*51.4*	*B*
3531 a																								
9.5	*48.*	*12.1*	*47.0*																					

18ᵉ–19ᵉ **+3°**

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	18ᵉ		+3°			18ᵉ–19ᵉ		+3°			19ᵉ		+3°			19ᵉ		+3°			19ᵉ		+3°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	40	14.3	52.8		8.7	52	51.2	7.3	K	9.5	2	21.8	49.1		9.5	13	15.7	24.8		9.3	22	48.4	52.8	
9.0		42.6	40.3		9.2		56.8	20.1		9.4		50.0	35.9		9.5		26.1	43.0		8.6		53.8	13.5	K
9.5	41	3.6	11.8		9.0		59.3	47.0	K	9.5		53.5	29.6		9.5		26.4	38.5		7.0	23	17.8	8.4	K
9.5		13.9	34.3		9.2	53	10.7	32.6		9.5		53.6	52.6		*9.4	14	4.3	48.2		9.5		23.6	8.6	*a*
9.4		22.4	18.1		9.5		14.8	12.7		9.4		55.0	20.8		8.9		17.5	21.9		9.2		31.0	21.2	K
9.5	42	14.9	58.5		9.5		33.4	55.6	B	9.0	3	8.2	2.9		9.5		21.9	28.8		8.6		36.7	29.8	K*b*
9.0		15.8	5.7	K	9.3		36.7	22.4		9.5		12.2	6.1	*B*	9.3		24.0	44.5		9.5		44.7	53.7	
9.5		47.7	15.1		9.5		36.8	46.0		8.5		18.4	13.1	K*b*	9.0		45.7	57.1		9.5		54.8	31.8	
8.4		49.0	59.1	K	9.1		43.7	49.4	K	9.4		27.1	11.9		9.5		56.0	43.8		9.5	24	3.5	23.9	
9.5		59.3	13.0	B	9.0		48.1	54.1	K*b*	9.5		32.3	47.3		8.5	15	9.7	3.9	K	9.5		9.2	53.6	
9.4	43	26.7	33.3		9.5		52.3	10.0		8.2		34.0	17.8	K	9.5		30.3	41.3		9.5		20.4	8.9	
9.0	44	0.6	46.5	K	9.5		54.8	41.0		9.5		39.7	47.7		9.5		33.7	2.5	B	9.5		26.3	20.6	
9.1		7.8	38.6	K	9.5	54	14.4	30.9		8.2		40.6	0.6	L	8.9		51.6	22.3		9.2		37.0	27.0	*a*B
9.4		8.5	48.6	*a*B	8.4		27.1	11.0	L	7.6	4	3.4	57.4	K	9.4		55.3	45.4		9.2	25	7.5	55.4	
9.1		11.2	59.5		9.3		35.0	16.4		9.4		8.0	27.7		9.5	16	0.0	36.5		9.3		19.7	0.4	
9.0		11.8	40.5	K	9.4	55	38.0	11.1	B	9.5		10.6	34.1		9.0		19.5	55.9	K	9.3		36 0	47.5	
9.1		45.0	37.7	K	9.0		38.4	2.0		9.5		25.4	21.0		9.5		20.2	59.2		9.0		36.8	43.1	
9.5	45	3.2	50.1		9.1		42.3	15.8	K	9.1		58.7	15.8	*b*	8.8		26.0	32.3		9.2		40.3	10.2	
9.1		11.2	21.9	*b*	8.5		49.2	37.5	K	9.5	5	14.1	44.0		9.5	17	9.4	44.6		9.0		46.8	15.5	
9.5		23.0	41.2		9.5		51.7	13.6	*a*	9.3		17.7	49.7		8.9		16.5	28.3	K	9.2		58.4	37.6	
8.1		27.9	52.9	K	9.0		52.7	39.2	K	8.9		32.1	19.1		9.4		22.2	9.5	B	9.3		58.5	21.7	
9.3		31.1	30.3		6.8	56	55.0	6.6	K	9.0		39.6	57.3		9.3		24.9	32.6		9.4	26	1.7	28.9	
9.4		44.0	7.2		8.9		57.1	53.2		9.5	6	22.3	11.5		8.9		30.7	9.2	K	9.1		6.0	17.7	
9.5		44.4	10.5		9.5	57	4.8	26.0		9.5		45.7	40.7		9.4		31.3	5.6		9.4		15.7	25.7	B
8.7	46	8.9	12.4	K	8.7		29.0	0.7	K	9.5		55.4	24.9		9.5		33.9	7.4		7.4		22.4	27.5	K
9.3		22.5	3.0		9.4		29.2	32.2	*a*	9.5	7	9.6	19.1	B	9.5		38.1	16.4		9.5		41.6	15.5	
9.2		33.7	12.5	K	9.2		48.6	49.5		9.5		15.7	42.5		9.0		44.2	53.9		9.4	27	2.5	52.4	
9.5		34.5	56.1		9.5	58	3.3	54.2		9.3		16.7	52.2		9.3		48.0	6.9		9.4		13.3	40.4	
9.5	47	3.3	24.0		9.5		4.2	6.1	B	9.4		43.2	38.5		9.3		49.7	32.7		9.4		14.8	24.5	
9.3		12.7	48.5		9.5		5.0	2.8		9.5		48.0	34.2		9.2		49.9	39.6		9.5		18.6	0.2	
9.2		14.0	39.6		9.0		12.7	20.0	K	9.5		54.3	16.8		9.5	18	6.3	53.9		9.5		38.3	19.9	
8.5		30.2	17.6	K	9.5		14.9	0.8		9.5	8	1.3	22.5	B	8.8		14.9	8.5		9.3		40.7	7.8	
9.4		59.6	35.5		8.8		49.1	2.5	K	9.1		4.7	1.6	*b*	9.5		29.7	52.2		9.5		43.8	54.8	
9.4	48	4.0	13.0		8.8		50.4	30.9		9.4		36.4	3.7		9.2		44.5	7.7		9.5		48.1	37.1	*a*B
9.0		27.5	48.8	B	9.4		52.2	12.1		9.4		46.0	48.3	*a*	9.4		45.8	12.1	B	9.5		57.2	41.6	
7.1		32.8	16.2	K	9.3	59	7.5	47.8		9.5		49.5	58.0		8.0		50.4	13.9	K	9.5		58.2	44.0	
8.5		36.1	11.1	K	9.5		14.7	16.5		9.4		57.1	51.9	B	8.8		51.7	30.5		8.8	28	2.1	3.6	K
9.0		39.7	35.2		9.5		26.0	23.8		9.5		59.8	40.7		8.7	19	8.6	13.2	K	9.5		13.3	2.9	
9.0		41.8	17.2	K	9.5		40.3	28.9		9.3	9	0.2	27.9		9.1		10.5	43.9		9.4		20.9	12.1	
9.1		48.6	9.2	*a*B	9.4		42.8	3.4	B	9.4		0.3	35.5		9.5		11.8	45.0		9.5		49.0	6.4	
9.3	49	10.7	13.7	B	9.5		51.0	39.8	*a*	9.5		35.2	45.4	B	8.4		19.9	14.5	L	8.6		58.6	48.0	K
9.3		15.9	0.9		8.1	0	3.4	13.3	B	9.5		46.6	54.2		9.5		22.2	28.1		9.4	29	3.0	16.2	
9.0		38.8	32.1		9.4		3.9	59.8		9.5		56.5	10.5		9.5		29.7	2.7		9.2		6.5	44.8	
9.5		45.2	56.4		9.0		4.4	27.8		9.2	10	17.6	59.9		9.5		35.4	27.2		8.0		10.8	52.4	K
9.5		50.4	42.9		8.5		4.7	41.3	L	8.7		20.5	20.1		9.5		44.5	57.0		9.4		27.5	31.3	
9.5	50	11.2	50.1		9.5		15.4	0.7		8.5		30.2	2.1	K	9.5	20	27.9	46.6		9.5	30	1.6	30.0	
9.4		18.7	2.5	B	9.5		25.0	59.9		9.5		50.7	35.0		8.3		30.5	40.6	K	9.4		10.1	57.3	
9.4		30.4	30.9		8.8		43.0	32.7		9.5		53.3	46.1		8.7		32.4	28.3	K*b*	9.5		10.7	2.6	
8.4		31.5	35.0		9.0		54.2	34.5		9.5		58.1	58.7	*B*	9.3		48.8	12.2		9.5		17.4	57.9	
9.1		33.6	57.8		9.5		55.0	49.8		9.5	11	17.0	46.1		9.5		55.4	27.7		9.4		38.0	19.5	B
9.5		56.4	3.0		9.1	1	2.1	18.0		9.5		41.5	12.9		9.5	21	0.6	10.0		9.4		42.8	10.3	B
*9.5	51	4.0	55.3		9.5		6.5	1.7		9.5		47.4	14.1		8.9		12.3	53.3		9.5		52.0	17.0	
8.6		6.7	35.3	K	9.5		18.7	59.1		9.4		59.1	45.2		8.1		26.1	24.6	K*b*	9.4	31	5.9	10.0	B
9.5		23.7	30.7		9.5		37.0	19.2		9.5	12	30.1	12.5		9.1		40.0	2.1		9.5		11.3	58.1	
8.7		42.2	18.4	K	9.3		51.9	24.8	B	9.5		37.4	9.7		9.5		42.0	25.5		9.2		21.5	32.5	K
9.0		43.2	18.9	K	8.8		52.4	21.4	K	8.9		41.7	57.8		9.5		55.9	7.8		9.5		28.6	43.0	
8.8		52.2	13.8	K	9.5		56.3	0.4		8.8		47.1	21.1	K	9.5		57.0	14.8		7.0		34.3	3.1	L
9.5	52	2.0	4.6		9.5	2	0.3	10.6		8.0		57.4	46.7	K	9.5	22	6.1	30.2		9.5		39.5	21.3	
8.9		10.5	50.1		9.0		4.6	39.5	K	8.9	13	6.4	32.1		8.4		41.2	56.3	K	8.8		41.1	22.1	K
9.3		35.4	54.9		9.5		15.0	58.0	*B*	9.4		7.3	46.6		9.3		44.9	52.7		8.5		42.4	28.4	K
10 pr.		*29.92*	*0.68*		*10 pr.*		*29.93*	*0.84*		*10 pr.*		*29.94*	*0.98*		*10 pr.*		*29.95*	*1.11*		*10 pr.*		*29.96*	*1.23*	

3851*a*				
9.6	*50*	*59.7*	*45.5*	*B*

3983*a*				
9.6	*13*	*48.0*	*2.5*	*B*

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	19ʰ		+3°			19ʰ		+3°			19ʰ—20ʰ		+3°			20ʰ		+3°			20ʰ		+3°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
9.5	31	55.9	32.3		9.5	42	17.4	54.7	B	9.4	52	46.0	54.4		8.2	4	37.7	22.8	K	8.8	19	35.6	1.7	K
9.1	32	0.0	28.9	*a*	9.4		27.6	32.6		8.9		51.4	15.2		9.3		44.2	48.6		9.4		48.3	44.1	B
9.5		14.0	52.0		9.0		52.2	8.7	K*b*	9.0		52.2	3.7		9.5		52.3	18.5		9.0	20	46.2	57.5	
9.5		29.9	26.6		9.3		57.2	10.6	B	9.5	53	23.9	28.4		9.2		59.9	9.3	*aB*	9.2		47.2	42.2	
9.5		31.7	17.5		8.5	43	0.5	0.1	K	9.5		33.7	26.5		7.9	5	43.8	3.6	K	9.4		55.5	19.8	B
9.5		34.0	36.3		9.2		4.3	15.7		9.3		49.6	55.3		8.9	6	0.2	40.3		9.2	21	29.2	51.5	
9.5		39 5	56.6		9.5		16.6	56.0		9.5	54	11.0	12.9		9.5		13.3	49.0		9.5		37.3	4.4	
9.5		41.8	0.0		9.4		39.1	34.9		9.5		21.1	55.5		9.1		17.0	34.1		7.8		57.9	58.4	K
9.2		59.1	16.0	K	9.5		50.8	48.4		9.5		23.4	44.0		9.5		33.4	58.4		9.2	22	5.1	2.0	
9.1	33	4.0	32.2		8.7	44	1.2	53.0	K	9.2	55	10.2	12.3	*b*	9.5		36.8	18.6		9.0		37.9	43.7	
9.4		8.6	51.4	B	8.8		4.0	17.1		9.5		43.6	43.3		9.5		37.5	12.8		8.8		40.5	4.0	
9.5		9.2	40.0		6.8		13.7	43.6	K	9.5	56	1.4	7.4		9.5		43.0	3.1		9.5	23	15.5	55.7	
9.5		18.5	18.3		9.5		27.8	27.2		9.2		19.2	37.7		8.0		58.3	22.3	K	9.5		40.0	22.3	
9.2		33.0	32.7		9.3		56.9	43.3		9.1		27.4	53.0	*a*	9.5	7	11.3	25.5		9.5		47.5	22.7	
9.3		40.4	18.5	K	9.1	45	4.0	24.0		8.7		43.9	43.0	K	9.5		32.6	41.4		9.5	24	7.4	31.5	
9.5	34	6.8	16.2		8.6		6.1	55.0	K*b*	9.0		49.2	54.5		9.5		38.4	56.4		7.2		29.0	56.4	K*b*
9.0		10.9	36.8		9.5		20.7	40.1		8.7	57	6.8	59.7	L	9.5		46.9	45.4		9.3		57.9	32.2	
9.0		25.6	50.4	K	9.4		31.9	58.0		9.3		33.1	48.1		9.5		51.9	51.0		8.7		46.9	47.1	K
9.5		40.3	53.2		9.5		49.9	34.3		9.5		40.2	54.0		9.4		53.9	12.1		9.0	25	7.5	55.8	
9.5		51.4	16.0		9.4	46	6.8	39.3		9.5		47.6	20.5		9.1	8	10.9	23.9		9.0		12.4	57.5	
9.5		59.8	30.9		9.5		25.7	21.6		7.9		55.3	0.3	K	9.3	9	11.1	41.3	B	8.5		14.7	39.5	K
9.4	35	12.6	1.0		9.5		37.0	21.5		9.0	58	0.7	44.2	B	9.5		11.1	38.3		8.5		15.1	9.8	*B*
9.3	36	7.8	43.9		9.5		57.6	13.3		8.4		17.1	5.5	K*b*	9.5		11.9	59.4		9.4		20.5	47.5	B
8.0		8.4	50.1	K	8.8	47	0.0	1.7		8.7		28.6	16.0	K	9.1		16.5	50.1		9.5		25.3	40.0	*a*
9.4		18.2	55.1	B	8.9		1.9	56.6	K	9.3		28.7	21.5		9.4		18.1	39.2		9.0		47.4	22.2	
9.5		30.2	57.2	B	8.9		8.5	35.4		9.5		41.6	40.5		9.3		30.2	46.0	B	9.5	26	12.9	52.5	B
8.9		37.6	25.1		8.8		8.8	30.6		9.4		43.0	11.5	B	9.0		46.9	19.5	L	9.5		13.0	54.0	
8.3		47.8	10.0	K	9.4		29.9	26.3		9.5		46.7	56.0		9.5		54.9	36.7		9.0		50.2	58.5	
9.5		57.3	23.2		9.5		34.5	20.8		9.4	59	4.0	17.2		9.5	10	24.4	52.3		9.5		58.3	31.7	
9.3	37	0.7	34.0		9.1		48.4	45.2		9.3		6.4	14.5	B	8.0	11	3.0	14.2	B	8.8	27	5.3	15.0	
9.5		10.3	35.3		9.2		50.4	41.6	*a*	8.8		13.4	50.7		9.0		14.4	36.7		8.8		12.4	26.7	K
9.5		19.2	2.5		8.7		52.1	37.6	K	9.4		19.7	37.2		9.5		29.9	50.5		8.8		18.9	42.0	
8.9		21.1	29.5		9.5		52.5	23.4		9.4		20.6	10.9		9.3		30.9	43.7		9.5		29.4	44.6	
9.4		27.0	44.7		9.3		56.6	19.7		9.5		28.0	0.2		9.3		59.6	3.3		9.0		31.9	21.5	
9.5		40.3	39.2	B	9.2	48	4.3	5.1		9.4		32.1	39.7	B	8.8	12	3.4	18.1		9.0	28	21.9	30.5	
8.9	38	24.6	20.2	K	9.5		17.2	51.9		9.4		39.2	1.0		9.2		23.9	40.5		9.5		27.6	27.4	
9.2		32.8	10.6	K	9.5		27.6	16.6		9.1		46.3	36.2	*b*	9.0		57.5	13.6		9.4		36.1	59.3	
7.3		43.9	54.0	L	9.5		28.1	23.6		9.5	0	8.7	54.1		9.5		58.3	49.0		9.0	29	4.9	24.3	
9.4		47.0	15.8		9.4		39.7	11.1		9.5		12.2	33.5		8.5	13	11.4	31.2		9.5		12.9	8.8	
9.5	39	0.9	54.1		9.5		46.7	47.4		9.3		27.3	47.5		9.1		17.1	43.2	*aB*	9.5		14.2	44.7	
9.0		11.5	56.7	L	9.5		51.9	41.9		9.5	1	32.5	45.8		9.3		21.7	55.2		9.5		20.4	2.9	
9.2		12.0	19.1	K	9.1		56.8	55.4		9.5		33.8	35.5		9.2		25.0	6.7	*aB*	9.0		51.6	2.0	
*8.9		18.0	34.8		9.3	49	30.2	35.1		9.5		38.0	43.7		9.4		35.9	8.5	*aB*	9.5	30	7.9	34.9	
9.1		37.6	15.3		9.4		45.8	36.5		9.1		44.1	2.0	*b*	8.3		38.1	49.8	K	8.7		8.3	36.4	
9.3		40.8	9.6		9.5		53.6	55.4		9.5		45.3	20.4		9.0	14	6.7	7.5		9.2		15.5	4.3	*aB*
9.3	40	9.4	42.5		9.3		55.3	56.8	B	9.5		53.8	50.0		9.3		18.9	27.4		9.5		17.0	9.3	
9.4		20.3	48.1		9.2		55.5	16.3	*b*	9.5	2	11.8	46.9		9.0		42.9	29.5		9.5		44.2	55.0	
9.5		29.2	8.5		9.5	50	16.1	47.0		9.5		19.9	17.2		9.0		51.9	39.2		9.2		44.7	2.4	*a*
9.5		29.3	49.1		8.9		18.7	1.3	K	9.4		37.5	30.3		9.2	15	10.7	7.1		9.5		59.9	38.5	
9.0		40.1	26.4		9.5		54.5	40.8		9.5		38.5	51.0		9.5		12.9	51.2		9.5	31	35.5	59.7	
9.1	41	4.2	18.7	K	9.5	51	2.6	44.6		8.7		45.4	56.2	K	9.5		58.9	57.5		9.5	32	0.8	3.8	
9.5		13.4	56.4	~~B~~	9.5		47.1	45.4		9.5		55.3	28 7		9.2	16	52.4	22.9	*b*	9.3		17.2	54.7	
8.4		14.6	4.7	K	9.1		47.7	52.3		8.5		55.8	13.8	K	9.0	17	4.9	37.8		9.3		57.5	31.2	*B*
9.4		21.5	59.4		9.0		55.6	36.1	K	9.5	3	4.8	54.8		9.5		44.2	57.5		9.5	33	4.9	19.1	
9.5		22.2	13.8		9.5	52	19.0	8.1		9.1		17.3	24.5	*aB*	9.0		44.2	31.6	K	9.5		9.5	23.9	
9.5		33.1	55.4	B	9.4		21.9	18.5		9.4		41.2	27.6	B	8.3		56.2	31.2	K	9.5		33.3	34.4	
9.5		34.0	32.7		8.8		27.9	21.0		9.5	4	5.8	36.2		9.0		59.4	46.4		9.1		52.4	6.7	
8.3	42	0.3	18.2	K	9.3		31.2	15.8	*a*	9.0		25.8	51.1	K	9.5	18	42.9	41.6		9.5		53.3	15.2	B
9.4		8.4	30.0	B	8.5		33.3	37.7	K	8.6		30.2	1.0	*B*	9.0		49.9	42.6	K	9.5	34	2.4	34.6	
9.5		10.9	59.1		9.2		39.4	26.4		8.5		32.8	42.7	K	9.5	19	35.3	8.4		9.0		16.7	52.9	
10 pr.		*29.98*	*1.37*		*10 pr.*		*29.99*	*1.51*		*10 pr.*		*30.01*	*1.64*		*10 pr.*		*30.03*	*1.81*		*10 pr.*		*30.06*	*2.00*	

4143 a

9.5	39	18.8	0.0	B

4401 — 4460					4461 — 4520					4521 — 4580					4581 — 4640					4641 — 4700				
	20ᵐ		+3°			20ᵐ—21ᵐ		+3°			21ᵐ		+3°			21ᵐ		+3°			21ᵐ—22ᵐ		+3°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
9.5	34	29.2	54.2	a	5.7	48	25.5	58.5	K	9.5	5	34.1	15.6		9.0	27	29.7	31.2		9.3	50	17.1	56.0	
9.0		29.3	5.8		9.5		27.7	18.5		8.9	6	18.2	59.9	K	9.5	29	31.0	55.3	B	9.3		44.2	57.1	
9.5	35	3.9	58.4		9.3	49	21.1	16.7		9.5		32.2	25.9		9.5		32.1	45.7		9.5	51	8.7	18.1	
9.5		7.2	50.7		9.4		33.9	46.4	B	9.5		34.4	55.0		9.2		42.0	15.4	Bb	7.2		12.1	5.1	K
9.2		8.7	52.9	K	9.5	50	25.9	43.9	b	9.5		37.0	51.7	B	8.9		55.2	46.8		9.4		32.5	33.0	B
9.3		40.5	9.9		6.5		33.1	37.5	L	9.4		45.8	31.3		9.5	30	3.7	25.0		9.4		48.5	30.0	B
9.2		49.3	4.1	K	9.0		59.6	22.2		8.8		48.3	29.1	B	9.0		48.7	28.1		9.5	52	5.7	14.6	
9.5		55.5	45.2		9.5	51	5.0	3.0		9.5	7	12.5	53.2		9.5		49.4	57.0		9.0		26.1	56.3	
9.3	36	5.0	36.9	B	9.5		8.0	49.5		9.0		25.7	50.2		8.5	31	6.2	37.1		9.5	53	11.1	53.5	
8.5		26.9	49.5		9.5		30.8	52.6		9.0		38.5	59.4		9.5		18.6	6.6		8.3	54	43.7	45.8	L
8.0		27.9	33.3	K	9.1		48.1	1.3	K	9.5		57.5	8.0		9.2		45.4	56.3	b	9.5	55	1.7	32.6	
9.5		45.5	4.0		9.0		49.7	18.6		8.8	8	37.9	5.6	K	9.0		48.7	43.3		9.3		28.9	2.5	b
9.0		53.6	5.4		5.5		51.1	44.4	L	9.5		52.7	53.8		9.5		49.0	18.1	B	9.5		29.1	51.0	
8.3	37	0.3	48.1		9.0	52	5.4	53.2		9.0		53.0	56.0		9.5		56.7	1.1		8.0	56	17.2	41.6	K
9.0		21.9	21.5		9.2		18.6	31.2	aB	8.5		54.2	49.2	K	9.5	32	12.8	52.6		8.5		49.2	49.6	K
9.0		25.9	36.0	K	8.8		25.9	42.1	K	9.0	9	10.2	37.4		9.5		13.7	3.2	B	9.5	57	25.7	32.3	
9.5		45.7	49.7		8.5		55.0	33.2	B	9.3		31.2	49.0		8.3		57.7	5.2		8.5		32.0	14.6	
9.2		52.4	22.0	aB	9.0		55.0	24.8		7.8		55.7	17.3	K	9.0	33	24.7	35.7		9.3	58	17.4	56.8	
9.0	38	26.5	58.9		9.0	53	18.4	26.2		9.3		58.2	36.4		7.0		29.7	13.2	K	9.3		24.0	6.1	
8.8		28.2	50.2		8.5		27.4	49.4	Kb	9.5	10	20.4	3.7		9.0		45.7	20.2		9.5	59	35.2	59.4	
9.5		43.6	10.1		9.5		34.9	39.1		9.5		21.0	26.0		9.4	34	42.8	29.6	B	9.4		41.2	40.9	
9.5		43.6	23.6		9.5		35.4	44.6		9.5	11	42.7	28.1		9.3		44.0	2.9		9.5		46.0	38.7	B
9.5		47.4	15.0		9.3		44.2	26.3	B	9.5		57.2	25.3		9.4		51.4	20.7	B	9.5		49.2	36.8	
9.0	39	2.1	6.7		9.4		56.8	35.6	B	9.5	13	19.7	12.5		9.0	35	11.0	26.7	B	9.5	0	47.1	1.2	
9.5		59.5	34.2		9.3	54	5.8	54.2		9.5		29.7	47.8		9.5	36	31.9	4.9	B	8.5		59.7	48.9	Kb
9.3	40	5.5	53.6		9.5		8.9	43.8		9.5	14	10.0	58.4		9.0		59.7	34.0	K	9.0	1	6.2	24.3	
9.3		9.2	19.2		9.5		29.9	37.9		8.8		11.2	7.5		9.3	37	30.7	39.1	B	8.5		29.7	16.0	B
9.0	41	6.5	53.8		8.3		44.0	12.0	K	8.8		17.2	21.5		9.4		38.6	39.3	B	9.5		30.2	48.6	
9.5		7.5	49.3		9.5	55	57.9	35.6		9.5		34.4	51.6		9.3		44.0	46.8		8.0		33.7	32.3	K
6.8		8.5	7.2	K	8.2	56	5.1	0.0	K	9.5		34.5	26.7		9.5		44.4	56.7		9.5		53.7	50.0	
9.5		41.3	25.4	Kb	9.3		32.7	52.6		7.0		45.2	43.3	L	9.5	39	12.2	19.5		9.5		57.2	31.6	
9.3	42	3.7	18.4		8.5		33.0	31.5	K	8.8		51.2	42.0	L	9.5		42.2	37.8		7.5	2	41.4	22.2	K
8.2		4.4	29.8	K	8.5		49.7	25.5	K	7.7		56.4	52.8	L	7.8		54.2	44.0	K	9.5		41.7	48.2	
9.0		4.9	41.6		9.4	57	3.9	33.8		8.0	15	10.0	8.4	K	9.5	40	13.5	4.8		9.1	3	49.0	46.3	B
8.2		25.2	49.5	K	9.5		10.3	3.7		8.8		26.2	28.3		9.2		19.4	49.6		9.5	4	24.0	19.8	
9.5		27.9	34.3		9.3		35.9	1.0	B	9.5		49.0	15.0	B	9.5	41	0.2	33.0		9.2		24.7	53.5	
9.2		55.5	6.0	a	8.9		50.7	59.0	K	9.5		49.2	44.7		9.0		13.2	43.4		9.0		35.2	10.4	K
9.5	43	9.0	29.0		9.4	58	17.0	8.2		9.3		55.2	32.3		9.0		15.0	37.8		9.5		42.7	13.6	
9.5		42.7	25.4	B	9.5		35.2	13.9		8.3	16	27.7	45.4	K	9.3		24.7	10.8		9.2		48.2	18.4	
9.5	44	22.6	39.9		9.5		40.0	57.1		9.3		40.4	34.8		9.5		26.3	19.8		9.5		53.7	8.9	
9.0		23.1	33.4		6.5	59	20.9	12.7	K	9.5		47.7	16.3		9.3		29.7	34.0		9.0	5	22.7	17.7	
9.0		33.9	7.7		9.3		35.4	48.7		9.0	17	1.3	6.1	K	9.5		49.2	37.8		9.5		40.8	2.4	
8.7		36.6	52.4	K	8.3		37.4	30.6	Kb	9.5		5.5	17.2	B	9.0	42	14.4	43.0		9.5	6	35.1	49.9	
9.3		44.1	31.6		8.0	0	3.1	33.3	K	9.5	18	26.2	43.3		8.8		29.7	32.9		9.0		53.2	45.1	
9.2		58.6	8.4	a	9.3		4.6	45.4		9.5	19	18.7	9.3		9.5	43	3.7	28.1		9.5		57.2	27.8	
9.5	45	19.6	44.7		9.3		10.1	12.1		9.5		24.4	41.3		9.5	44	22.2	32.6		9.3		58.7	43.0	a
9.5		38.6	3.9		9.3		32.1	52.1		9.5	23	27.7	2.9		9.3	45	23.7	35.4		6.7	7	28.2	32.6	L
9.0		42.6	51.3	K	9.2	1	52.4	54.2	b	7.3	24	0.7	11.5	K	9.5	46	27.7	40.6		9.3	8	1.7	22.2	
9.0	46	22.3	2.6		9.3	2	0.9	34.1		9.5		17.2	36.4		9.2		44.3	52.6	b	7.3		20.3	33.4	K
9.0		48.6	11.1	L	8.5		8.1	33.6	K	8.5		21.0	29.5		8.5		56.2	37.4		9.5		22.7	28.1	
8.5		51.3	24.0	L	9.5		59.2	59.3		9.5		21.3	53.2		9.5	47	14.1	1.8		8.8	9	0.1	18.8	
9.0		54.1	39.6		9.3	3	28.1	34.4		8.3		50.0	4.8	K	9.0		17.4	35.7		9.5		8.5	17.7	
9.3		57.6	21.9		9.0		38.1	15.3		9.5		56.0	58.2	B	9.5		46.2	13.8		9.5	10	34.8	10.7	
7.8	47	26.3	2.8	L	7.5		45.1	19.7	K	9.5	25	15.0	0.8		9.0	48	36.2	33.0		8.8	11	31.2	25.3	K
9.3		44.0	46.4	B	9.1		59.9	47.4	aB	7.7		54.1	54.7	K	8.0	49	22.7	19.1	B	9.0	12	16.0	31.9	K
9.5		57.5	28.4	B	7.8	4	6.1	38.4	K	9.5	26	3.2	18.1		9.5		37.2	42.0		9.0	14	16.0	50.6	
9.3	48	2.6	59.0		9.3		13.0	46.3		9.3		5.3	57.6	K	8.8		57.7	34.0		9.5	15	49.7	49.0	
9.5		9.5	17.0	B	9.4		15.7	32.9		9.0		18.2	3.3		9.0		58.3	55.1		9.0	16	8.1	6.4	K
9.3		19.0	57.0		9.0	5	8.1	39.5		9.0	27	3.8	1.2		9.0	50	6.2	29.2	K	8.5		8.3	6.7	K
9.3		21.6	54.4	B	9.5		22.6	5.1		9.5		20.4	49.4		7.3		12.7	28.8	K	9.3		37.7	21.5	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		30.09	2.16		10 pr.		30.13	2.34		10 pr.		30.18	2.51		10 pr.		30.24	2.72		10 pr.		30.32	2.90	

4701—4747					4748—4794					4795—4841					4842—4888					4889—4935				
	22ᵐ		+3°			22ᵐ		+3°			22ᵐ—23ᵐ		+3°			23ᵐ		+3°			23ᵐ		+3°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.5	17	6.6	4.6	K	7.7	32	29.2	21.6	K	8.9	48	14.0	22.8		9.1	8	5.5	57.5	b	9.3	36	9.2	7.4	
9.3		40.0	4.6	Kb	9.5		36.5	57.0		9.2		28.0	18.3		8.6		56.5	42.4	B	9.3	37	20.7	49.0	
9.3	18	51.5	59.6		9.3		49.5	52.4	B	8.7		53.2	34.8		8.8	9	29.5	9.6	K	9.5		28.0	25.0	
9.3	19	12.2	51.9		6.6	33	5.5	49.0	Kb	9.4	49	16.5	45.3		8.6		38.0	40.0	K	9.3	38	12.4	3.4	
6.0		15.7	39.0	K	8.7		12.0	55.2	K	6.5	50	12.8	1.3	Kb	9.2		46.0	3.7		9.3		26.7	29.4	R
9.5		55.1	6.7		9.1		55.0	18.7	B	9.3		25.0	11.2	B	8.5		55.4	39.5	K	8.8	39	14.4	46.0	
9.3		57.3	17.9		8.5		56.0	31.2	K	9.5		28.0	20.1	B	9.3	11	48.7	42.3		8.2	40	20.6	25.2	Kb
9.5	20	22.3	56.5		8.7		59.8	0.0	K	9.3		45.4	57.9		9.0		59.3	5.6		8.2		25.3	21.1	K
8.8		24.6	47.0	K	8.7	34	0.1	57.9	K	9.2	51	5.0	3.2	B	9.5	12	40.5	17.1		8.7	42	43.5	39.7	B
4.8		33.8	58.7	K	9.4		3.5	32.5		8.9		18.5	14.5		9.2	13	4.0	2.0	aB	9.5	43	49.2	5.8	b
9.3		52.3	36.6		9.4		31.0	14.4	B	6.9		58.5	35.5	K	9.2		17.0	42.2	aBb	7.5	44	16.7	53.6	K
9.5	22	6.0	13.2		9.3		45.7	12.8		9.5	52	1.5	12.1		9.3		28.2	16.1		7.7		28.9	55.9	K
6.3		40.2	41.4	K	9.4	35	0.0	39.2		9.5		26.2	6.6		9.2		56.3	3.1		9.5	46	54.7	33.1	
9.0		52.5	49.7		8.7		19.5	44.2		9.4	53	0.5	6.9		9.5	14	40.8	29.2		9.0	47	33.0	39.6	
9.3		58.2	15.5		9.3	36	26.5	3.4	B	9.2		37.0	33.5		9.3	15	15.7	57.2		9.4	48	2.0	35.3	B
8.0	23	19.7	34.8	K	7.5		28.8	7.1	K	8.9		43.5	40.3		9.3		29.7	13.1		9.4		3.5	32.8	B
9.0		36.0	36.6	B	8.5		36.0	33.1		9.2		54.6	14.4	aBb	9.5	16	5.7	30.2		8.8		20.2	16.8	
8.4		51.7	30.3	Kb	9.4		44.5	23.5		9.4	54	9.7	59.3		9.2	18	33.6	10.2	K	9.5		30.2	19.3	
9.5		56.2	48.6		8.9		47.2	15.9		8.9		15.5	22.8		8.3		58.2	34.1	K	9.3		47.7	9.0	
8.8	24	26.5	16.6		9.4	37	10.0	26.8	B	7.0		20.2	40.3	K	9.2	19	42.6	58.6	b	8.8		52.2	50.4	K
9.4		28.5	8.7		9.5		48.0	33.5	B	9.5	55	13.0	26.2		8.6		59.5	39.2	K	7.2	49	22.4	54.6	K
9.4	25	11.3	9.6		8.4	38	16.5	45.5	K	9.2	56	6.5	42.8	b	9.3	21	35.5	36.7		9.3		57.2	35.8	
9.0		57.8	40.6	B	9.5		41.5	10.4		8.5		30.0	22.1	K	9.5	22	15.5	13.5		9.3	50	54.5	40.8	B
9.1	26	8.7	35.5	a	9.0		55.9	2.3	L	4.7		33.0	1.3	K	9.5		44.1	3.0		7.8	51	31.2	27.6	L
9.2		17.4	58.1	b	8.5	39	43.5	23.5	K	9.2		54.5	7.2	B	9.5	23	43.0	36.2	B	8.8		44.5	54.5	K
9.5		27.7	7.5		9.5	40	16.9	9.8		8.5	57	16.0	19.0	K	8.5	25	2.1	14.7	K	9.0		52.5	26.2	
9.2		30.7	8.1		7.5		48.0	13.1	K	7.7		37.0	48.7	L	9.0		41.3	1.3	K	9.3		53.7	13.5	
9.4		54.0	8.2		9.3		54.7	1.7		8.0		38.2	26.3	K	8.1		48.8	33.1	K	9.5	52	7.7	17.0	
9.5	27	6.0	7.7	B	7.5	41	36.7	31.7	K	9.2	58	2.7	33.9		8.0	26	1.4	50.8	K	9.0		12.5	22.6	K
7.8		11.1	29.7	K	9.2	42	2.2	48.6		9.2		6.5	21.3	Kb	9.5		7.1	56.3		8.7		23.2	56.2	
8.9		28.5	6.7	L	9.4		20.0	50.3		9.4		16.0	45.0		8.8		39.0	24.4		9.3	53	5.7	29.4	
8.4		39.0	24.1	K	8.9		26.5	40.7		8.9		43.6	53.8		9.3		45.6	10.2		9.3		6.7	36.9	
9.2	28	12.5	29.9	aB	8.5		41.5	30.7		9.3	0	4.5	5.5		9.0	27	11.7	53.6		9.3	54	55.7	40.7	
9.0		22.0	32.1	K	9.5	43	16.7	55.8		8.1	1	14.4	54.2	K	9.2		21.5	3.1	b	9.2		56.3	57.8	
9.3		34.2	45.1		7.5		17.7	18.3	K	9.3	2	38.2	4.4		9.5		58.1	24.6		9.3	55	21.5	52.1	
8.4	29	19.2	45.5	L	9.5		35.5	17.5		8.9		58.0	24.1		9.5	28	6.3	55.4		8.7		21.5	3.5	K
9.5		44.0	28.0		8.9		54.0	35.5		9.3	3	46.2	30.4	B	9.0		13.4	14.7		8.7	56	6.2	55.7	
8.4		59.5	41.7	K	8.7	44	6.0	21.5	B	9.3		55.5	39.3	B	9.5		34.4	28.1		7.9		15.5	5.1	Kb
8.4	30	5.0	48.6	K	9.4	45	12.0	17.4	B	8.9	4	15.5	28.3		9.3		55.4	12.0		9.0		18.0	31.7	
9.1		28.7	9.2	b	8.7		37.0	17.3	L	8.8		24.6	55.5	K	9.5	29	2.6	41.2		9.3		57.5	6.2	
8.9		30.5	40.7		9.4		37.8	5.1		9.2		34.0	36.5	R	9.5		28.8	41.9		9.3	57	49.4	34.2	
9.1		51.5	20.7		8.9		47.2	54.5		9.4		47.0	42.1		9.3		30.8	8.1		9.5	58	25.3	36.0	
9.5		54.3	26.0		9.5	46	13.2	14.8		9.1	5	21.5	52.4		9.4	31	7.0	30.8	B	9.5		46.2	27.6	
9.4	31	25.5	25.9		8.5		16.0	28.7	K	9.0		34.0	59.4	L	9.4		12.0	31.3	B	9.0	59	8.2	22.0	
6.5		32.7	47.2	K	9.4	47	38.0	4.1		9.2		42.0	7.3	b	9.3		35.2	21.6		8.8		21.2	38.6	
8.9		53.2	40.0		9.2		44.5	19.7	ab	8.8	7	36.0	10.0		9.0	32	15.7	22.6		9.3		41.0	3.9	
9.3	32	13.2	13.1		9.4		57.5	10.6		9.5		43.7	1.5		9.0	34	44.5	23.0		9.3		54.7	45.8	
			+	+				+	+				+	+				+	+				+	+
10pr.			30.39	3.06	10pr.			30.44	3.13	10pr.			30.50	3.22	10pr.			30.50	3.30	10pr.			30.69	3.34

Zone + 4°

1—40				41—80				81—120				121—160				161—200			
	0ᵐ		+4°		0ᵐ		+4°		0ᵐ		+4°		0ᵐ		+4°		0ᵐ — 1ᵐ		+4°	
m	′	″	′		′	″	′		′	″	′		′	″	′		′	″	′	
8.2	0	41.2	7.2	K	9.5	14	16.3	58.2	9.3	29	52.9	14.0	K	9.5	40	11.0	36.6	B	9.5	55	28.2	16.9	
9.5		47.0	39.5		9.0		57.3	25.8	K	9.3	30	5.1	12.0	K	9.0		34.3	18.1		9.5		30.9	1.2	
9.5		49.8	26.8	B	9.5	15	31.7	43.8		9.3		33.3	20.3	K	6.0		49.4	31.4	K	9.3		34.9	57.2	K
9.0	1	4.7	49.3		9.4	16	6.8	43.3	B	9.0	31	6.1	39.1	B	9.5	41	40.3	43.4	R	9.0		54.9	10.0	
8.5		23.7	16.9	K	9.5		17.0	43.8		9.5		13.0	15.4		9.4		41.2	4.5	B	9.4	56	9.6	22.1	
8.5		24.0	21.0	K	9.3		38.9	59.6	Kb	9.0		27.4	45.5	K	8.7	42	4.7	7.8	K	7.4		12.3	26.8	K
9.5		24.1	40.0		9.3	17	2.0	54.5	K	9.5		30.9	53.5		9.5		42.1	44.0	B	9.5		30.9	53.8	
8.0	2	29.5	1.7	K	9.5		3.2	14.1		9.5	32	6.1	50.4		8.8	43	30.5	50.8	K	9.4		50.7	27.1	
9.0		49.7	4.9	Kb	9.5		38.0	14.4		9.5		10.0	0.1		9.5		40.5	9.9	B	8.9	57	3.3	11.2	
9.5		54.4	31.1	B	9.5		57.8	51.9		9.0		51.5	28.9	Kb	9.5	44	1.3	44.2		9.5		8.9	50.7	
9.4		58.5	33.6		9.5	18	1.3	16.4		9.5	33	28.4	55.6	aB	9.5		49.1	16.1		*9.5		9.0	20.0	
9.3	3	12.3	7.0		9.5		47.0	38.7		9.4		50.9	59.1		9.3	45	14.0	47.7		6.0		23.0	52.4	K
8.5		25.8	17.6		9.3	19	0.2	40.4		9.5	34	3.6	3.9		8.8		49.5	12.7	K	9.5		55.6	48.8	
9.5	4	41.7	15.2		9.5		11.2	23.7		8.7		12.0	45.9	R	9.5	46	1.0	43.7		9.5	58	20.1	53.6	
9.2	5	11.4	56.5	b	9.0		46.9	50.4		9.0		47.1	54.7		9.5		55.0	0.4		6.7		20.8	8.4	L
9.5		18.8	9.7		9.3		52.3	12.3		9.5		47.8	19.6		9.5	47	11.3	25.4		8.2		21.6	8.6	P
9.5		23.5	35.0	B	9.3		58.8	15.1	B	9.3		52.3	42.8		9.5		14.4	11.8	B	9.5		28.7	58.8	
9.5		23.7	50.4		9.0	20	11.7	4.8	Kb	9.2		52.5	0.4	a	8.7		54.5	35.2	K	9.2		33.0	53.2	K
9.5		40.4	49.3		9.5		12.5	1.2		8.0	35	5.4	53.1	B	9.5	49	37.2	50.3		8.7		56.7	15.0	K
9.4		42.3	32.2		9.5	21	28.6	47.8		9.5		15.5	41.2	B	9.5		55.1	53.5		9.5	59	38.5	15.8	
9.5	6	18.8	52.9		9.5		35.5	31.7		9.3		20.3	3.7		9.3	50	3.3	16.7		9.3		42.7	51.2	
8.6		54.2	5.4	Kb	9.3	22	18.1	36.2		9.4		51.6	56.8	aB	9.5		4.1	22.3		8.8		44.2	15.0	K
8.6	7	31.4	47.1	K	7.0		43.5	3.0	K	9.5	36	4.5	13.4		9.5		36.0	36.0		9.2		49.1	46.1	
9.5	8	18.5	22.8		8.5		47.4	34.2	R	9.0		18.7	40.7		9.5		43.1	52.5		9.0		54.6	15.5	
9.5		26.8	49.6		9.5	23	34.7	28.4		9.5		56.8	45.1		9 0	51	2.9	7.6		8.7		54.9	8.8	K
9.5		38.7	25.6		8.0	24	23.5	1.9	L	9.3	37	17.5	29.0	K	9.0		18.4	52.2	K	8.8		59.5	24.4	Kb
9.5	9	56.5	50.3		9.3		26.5	21.6	B	9.3		34.2	2.0		9.2		23.9	42.7	K	9.0	0	28.0	22.8	K
9.0	10	25.8	8.8	K	9.0		39.2	24.1	B	9.0		35.0	45.6	B	9:2		35.6	35.7	K	8.8		38.4	18.8	K
9.5	11	31.0	47.1		9.5	25	6.3	33.6	B	8.2		36.1	22.0	K	9.5		43.2	33.5		9.5		47.0	13.8	
9.4		34.4	49.8	aB	9.5		9.3	37.2		9.5	38	1.4	49.8		9.0	52	38.1	6.4	K	6.0		53.3	52.5	L
9.5		57.2	8.4		9.5		11.8	55.6		9.0		6.5	36.5	K	9.2		47.1	15.7		9.3		57.2	24.2	
8.8	12	2.4	57.3		9.3		58.7	40.0		9.5		13.1	1.9	K	9.5		53.9	36.3	B	9.5	1	1.6	52.6	
9.5		6.0	26.6		8.4	26	12.7	7.5	L	8.7		35.5	29.5	K	9.4		57.7	33.8		9.5		1.6	32.8	
9.5		46.8	41.4		9.4		33.0	56.4	K	8.9		48.8	57.5		9.5	53	9.4	44.6		9.0		30.4	15.7	K
9.3		51.0	32.1		9.5		36.3	4.6	a	9.0		51.8	31.3	K	8.0		21.8	2.5	K	8.7		56.8	40.1	Kb
9.2	13	2.5	2.7	K	9.5		36.3	12.0		9.0	39	7.5	6.0		9.0		46.7	47.5	Kb	9.5	2	4.6	41.5	R
9.2		10.4	8.5		9.5	27	41.8	13.0		8.5		17.4	33.4	K	8.5	54	3.0	20.9	K	9.3		39.1	49.5	
9.2		31.1	7.4		9.5	28	26.4	8 3		8.6		19.9	2.2	R	8.3		53.1	16.1	L	9.0		44.1	32.4	K
9.3		47.2	26.2	Kb	9.5		40.9	41.6		9.0		21.9	9.6		8.5	55	2.9	58.0	K	9.5	3	10.3	41.5	B
9.5		50.0	29.1		8.2	29	28.8	37.2	K	9.5	40	1.4	36.1	B	8.8		17.4	15.8		9.4		16.5	35.0	B
			+				+					+					+					+	
10pr.			30.75	3.34	10pr.			30.82	3.33	10pr.			30.88	3.39	10pr.			30.94	3.26	10pr.			30.99	3.23	

171 a				
9.6	57	10.1	46.9	B

201—260

m	1° ′ ″	+4° ′	
9.5	3 22.5	3.0	
9.5	22.5	38.0	
9.5	25.0	29.0	
8.5	4 26.0	6.7	R
9.0	37.8	7.7	K
9.5	51.0	47.0	
9.5	55.0	46.7	
9.5	5 10.6	15.8	
9.5	46.1	32.4	
9.1	6 2.9	5.4	
9.5	5.3	20.0	
8.1	20.7	21.7	Kb
8.7	7 6.7	26.6	K
9.5	36.9	44.2	
9.3	8 34.3	23.8	Kb
8.2	9 15.0	16.9	K
9.2	29.2	25.2	
9.5	11 18.9	57.2	
8.5	33.5	15.5	R
9.3	12 10.9	57.3	
9.5	17.0	21.9	
9.5	29.3	29.0	
9.3	32.5	1.5	
9.5	52.0	1.1	
9.2	13 19.6	15.2	K
9.5	34.0	23.2	
9.1	39.0	51.3	a
9.5	14 6.7	47.9	
9.5	10.2	29.3	
8.0	53.2	29.4	P
9.5	53.6	3.1	
8.7	54.5	58.2	b
9.5	15 8.0	38.1	K
9.0	33.4	20.1	
9.5	46.8	44.0	
9.3	16 3.7	9.6	
9.5	5.9	22.3	
9.1	7.5	53.3	aB
9.5	12.0	7.8	
8.7	19.0	33.2	K
9.5	21.3	20.6	
9.5	26.6	1.0	
9.0	36.6	28.1	K
9.0	58.7	26.0	K
9.2	17 15.3	25.6	K
9.5	21.8	3.7	
9.5	27.4	56.7	
8.5	37.8	41.8	K
9.0	18 46.8	52.7	K
9.3	20 0.7	45.1	K
8.0	8.7	36.8	K
9.5	29.5	34.5	
9.5	21 23.6	46.0	
9.5	24.5	2.3	
9.1	37.3	57.2	ab
9.5	45.5	54.5	
9.3	22 14.8	24.9	B
9.3	41.7	20.6	B
9.5	47.3	32.3	
9.4	50.9	20.8	B
10pr.	+ 31.05	+ 3.17	

261—320

m	1° ′ ″	+4° ′	
8.2	23 2.7	37.5	B
9.5	39.5	5.5	
9.4	41.9	22.9	B
9.5	49.4	16.9	
9.5	24 12.5	50.1	
8.2	25 21.2	1.8	K
9.0	21.9	12.8	
9.5	27.4	57.5	
8.7	29.4	37.2	
9.4	35.0	0.3	
9.0	51.8	17.8	
9.5	54.2	28.8	
9.5	26 37.5	1.4	
9.5	51.5	42.4	
9.4	27 40.2	54.0	
8.8	58.4	48.9	K
8.7	28 2.8	15.7	K
9.5	13.8	32.7	
9.0	39.5	43.8	
9.5	56.0	6.6	
9.5	29 1.4	44.7	
8.5	28.5	53.1	K
9.5	45.0	55.2	
9.4	30 14.7	24.8	B
9.5	34.6	29.9	B
9.5	31 19.6	49.8	
9.0	20.1	24.0	K
9.5	32 17.0	47.5	
9.0	35.2	10.8	K
9.5	33 5.3	51.4	
9.4	19.5	2.8	
9.5	49.0	22.4	
5.0	54.5	45.4	K
9.5	34 3.6	7.5	
8.8	20.0	19.3	
9.2	35 0.5	9.7	
9.0	14.3	59.7	
8.8	34.2	29.0	K
8.8	38.8	35.9	K
9.1	39.2	22.0	
9.5	55.2	30.3	
9.5	55.6	7.9	
9.3	56.2	52.3	
9.3	57.0	54.6	
8.3	36 27.2	15.5	L
9.5	28.9	26.2	
9.3	42.5	21.4	
9.5	39 2.9	55.4	
9.5	18.0	3.9	
9.5	38.7	55.6	
8.8	40 6.1	2.0	K
9.4	22.0	58.0	
9.5	33.0	4.5	
9.3	41.6	17.1	
9.5	41 17.0	57.4	
8.5	55.7	54.6	K
9.0	42 0.0	41.8	
9.5	32.2	29.6	
9.5	43 30.1	0.3	
9.0	53.8	13.6	K
10pr.	+ 31.13	+ 3.06	

321—380

m	1°—2° ′ ″	+4° ′	
9.5	44 24.6	31.3	
9.5	43.2	23.7	
9.0	47.6	44.6	
9.5	45 1.9	32.7	R
9.2	2.4	53.7	a
9.1	33.2	16.1	
8.7	51.8	49.8	
9.5	47 32.9	58.1	
9.5	49 33.6	20.2	
9.5	36.3	45.8	
9.5	50 20.0	17.4	
9.5	51 5.1	18.5	
9.5	31.9	24.0	
9.5	50.0	41.7	
9.3	52 20.3	56.8	
9.5	53 7.6	50.5	
9.5	15.5	12.1	a
9.0	16.0	13.5	
9.1	24.2	34.8	B
8.0	34.0	37.1	K
9.5	54.4	50.5	
9.5	55 11.1	19.4	
8.5	14.0	38.2	
9.0	56 2.3	9.4	
9.3	49.0	37.8	
9.5	57 19.0	20.2	
9.3	58 4.8	10.0	
8.5	20.1	36.8	Kb
9.5	36.0	20.9	
9.5	59 6.0	58.2	
9.5	49.2	5.3	B
9.5	53.7	9.5	
9.5	0 1.7	5.5	
9.7	5.0	56.4	K
9.5	9.5	10.7	
9.0	1 25.3	26.1	
9.5	58.7	8.3	
9.3	2 8.2	39.7	
9.3	35.7	6.6	
9.3	39.0	20.1	
9.5	40.5	37.5	
8.5	3 21.9	24.7	Kb
9.5	52.3	13.6	
8.8	4 0.2	5.6	K
9.3	5 33.4	41.7	
8.5	41.8	4.3	
7.3	56.5	20.1	K
9.5	6 0.7	51.8	
9.5	54.5	40.0	
8.5	7 26.2	12.1	K
9.4	42.3	59.1	
9.0	43.7	44.3	
9.5	47.2	34.0	
9.0	8 11.2	58.7	K
9.5	17.2	29.2	
9.5	29.6	2.0	
8.4	9 19.6	0.2	K
8.5	44.3	41.3	P
8.7	47.3	51.3	
9.5	10 24.4	5.1	
10pr.	+ 31.24	+ 2.99	

381—440

m	2° ′ ″	+4° ′	
9.5	12 13.2	14.0	
9.1	22.5	48.7	aB
8.8	39.1	8.8	
9.5	13 16.1	34.7	
9.3	39.7	22.2	
8.2	14 28.2	4.7	Kb
9.5	59.0	38.5	
8.5	15 12.1	17.4	K
9.5	16 3.3	36.8	
9.2	36.9	23.2	Kb
9.5	56.2	17.3	
8.5	17 17.2	21.9	K
9.3	53.2	12.5	
9.5	18 54.0	58.1	
9.5	19 2.8	26.5	
9.5	11.0	2.5	
9.5	20 0.9	24.7	
9.4	32.5	56.7	
9.5	48.0	59.5	
9.5	56.1	58.3	
9.0	59.5	30.4	
9.2	21 35.7	9.5	
9.2	43.2	16.7	
9.5	22 4.2	47.6	
9.0	7.7	14.6	K
9.5	23.6	43.7	
9.3	55.9	25.1	
9.5	23 0.6	34.1	
9.5	14.0	56.3	
9.0	24.5	36.8	
8.8	24 51.3	53.2	
8.3	25 13.1	34.4	
9.4	26 11.1	35.8	B
8.8	52.0	36.9	
9.3	27 2.2	50.6	R
9.3	28 2.8	28.2	
9.5	14.2	3.1	
5.3	17.5	57.0	K
9.5	45.2	57.2	a
9.5	30 9.7	33.0	
9.5	39.6	43.8	
9.3	31 58.0	24.3	
9.5	32 14.3	1.8	
8.8	26.7	29.9	K
7.8	33 22.7	14.3	K
9.0	25.8	30.2	K
9.3	47.3	44.8	
9.5	50.9	58.2	
9.0	34 33.9	24.4	
9.5	40.2	33.3	
9.2	35 36.6	52.5	a
9.0	41.4	41.4	
9.0	36 12.7	57.4	K
8.5	37 2.2	56.6	K
9.0	28.9	5.8	K
9.5	39.5	57.8	
7.2	46.6	5.6	K
9.5	38 1.9	13.3	
8.2	38.1	58.8	Kb
9.0	48.3	15.5	
10pr.	+ 31.34	+ 2.70	

441—500

m	2°—3° ′ ″	+4° ′	
9.3	39 14.3	24.0	
9.5	45.4	45.3	
9.5	52.8	34.8	B
9.5	57.9	3.2	
9.5	40 6.8	31.4	
9.5	26.8	53.9	
9.5	40.3	16.8	
9.3	42 18.8	14.7	b
9.5	27.3	1.5	
9.5	39.4	28.6	
9.5	44.8	6.0	
9.4	44 17.2	27.8	
8.2	36.9	54.9	K
8.5	45 29.1	51.2	Kb
9.0	48.6	41.4	K
9.0	46 7.4	31.4	K
9.4	11.3	13.1	B
7.8	38.3	27.5	K
9.0	53.6	52.6	K
9.5	56.4	31.0	
9.1	47 2.8	14.0	B
9.5	4.3	51.5	
9.2	28.8	55.7	
9.1	48 0.3	54.9	K
9.0	9.8	4.7	
9.3	31.2	2.1	
9.6	48.6	42.5	
9.3	57.8	7.0	
9.5	49 16.8	18.6	
9.0	21.9	57.1	K
8.7	43.1	54.7	K
9.5	43.3	46.0	
9.3	50 0.8	34.5	
9.5	31.8	20.3	
9.5	39.3	47.7	
9.5	51 5.8	46.3	
9.5	26.7	6.2	
9.5	32.1	9.5	
9.5	53 1.4	22.0	
8.4	18.4	42.9	B
9.2	27.4	52.4	
9.0	28.9	26.3	
9.5	40.8	26.2	
9.3	50.4	37.3	
7.0	54 15.2	46.4	K
8.0	55 2.6	37.2	K
9.5	29.2	19.9	
8.7	53.0	46.4	K
9.5	56 8.5	53.5	
9.4	31.8	25.6	
9.5	57 8.7	49.8	
9.3	30.9	54.9	
8.0	58 35.6	15.4	K
8.8	42.3	45.1	
9.0	44.8	43.1	
8.7	59 37.8	26.9	Lb
9.1	0 30.4	57.7	Kb
9.5	37.4	42.6	R
9.3	1 46.4	40.3	K
9.5	51.7	26.9	
10pr.	+ 31.43	+ 2.46	

501 – 560				561 – 620				621 – 680				681 – 746				741 – 800			
	3ª	+4°			3ª	+4°			3ª – 4ª	+4°			4ª	+4°			4ª	+4°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.6	1 59.4	38.3	K	9.2	29 32.6	25.6	K	8.9	54 33.7	10.8	K	9.3	14 36.5	30.5		9.2	36 3.3	16.2	K
9.3	2 19.2	26.2		9.0	43.7	24.3	K	9.2	53.6	3.4		9.1	38.1	59.0	a	8.8	4.6	28.5	K
9.2	37.0	19.9	K	9.0	52.3	57.2	Kb	9.5	55.1	5.0		8.5	15 23.5	15.9		9.4	16.3	1.8	
9.2	39.0	40.4		9.5	55.2	26.7		9.5	55 7.0	41.8		9.5	16 37.8	16.9		9.5	45.1	1.0	
9.5	3 17.7	11.8		9.3	31 14.8	59.9		9.1	27.4	24.8		9.3	17 0.3	28.0	Kb	9.3	37 8.9	32.3	
9.5	48.8	40.7		9.0	19.2	17.4		9.5	35.2	24.2		9.0	0.5	21.6	K	9.5	33.7	40.7	
8.4	58.3	10.2	K	9.5	50.0	19.7		9.5	35.8	26.6		9.0	38.1	43.9	K	9.5	34.2	22.7	
9.1	4 20.4	52.9	K	9.2	32 28.2	9.4	aB	9.5	56 17.8	46.4		9.5	50.0	23.7		9.5	38 15.4	36.9	
9.0	5 2.1	39.6		9.2	42.3	26.9		8.7	57 13.4	23.1	K	9.5	18 1.8	55.9		8.2	19.2	5.0	K
9.4	2.4	1.8		9.2	45.7	47.5		9.5	23.7	52.0		8.0	15.7	48.2	K	9.3	21.2	8.4	
9.0	40.5	12.8		7.0	51.3	40.1	L	9.0	58 14.0	3.8	K	7.2	23.1	2.4	Kb	9.5	39 9.5	22.3	
9.5	40.5	26.9		9.2	33 0.3	13.6		8.8	20.6	17.4	Lb	9.0	54.6	15.4		9.0	14.2	56.3	K
9.0	48.6	16.0		9.5	5.2	33.8		8.8	59 8.3	29.5	K	9.5	19 15.5	59.7	a	9.0	40 29.0	32.1	
9.3	6 20.2	19.0		9.1	38.3	9.7		9.5	37.8	3.7	B	9.5	20 16.4	3.4		8.2	41 25.8	57.0	B
9.5	47.2	24.1		9.0	42.6	34.4		9.5	41.6	57.8		9.5	21 57.5	13.6		9.0	26.6	57.7	B
9.5	52.2	27.2		9.5	34 27.9	30.5		9.1	50.9	10.1	b	7.8	58.3	50.1	K	9.5	42 14.7	9.4	
9.5	7 57.3	55.3		9.5	31.4	9.5	B	9.5	0 9.7	42.8		9.2	59.1	44.5	aB	9.3	42.9	23.0	
9.5	8 47.1	12.4	B	9.0	36 10.8	56.3		9.5	43.9	32.1		9.5	22 4.4	22.5		9.5	43.7	8.8	
8.7	9 8.7	29.7		8 8	26.6	35.8		9.5	43.9	43.9		9.5	7.5	10.0		9.5	49.4	53.0	
9.5	46.7	12.0	B	8.9	37 0.0	51.1		9.5	59.1	17.8	B	8.7	12.7	57.5	K	9.5	57.8	21.3	
9.2	10 15.8	36.7		9.5	18.0	1.9		9.5	1 20.2	36.1		9.1	30.5	58.7	a	9.5	58.5	41.7	
8.3	30.1	26.4		8.7	22.1	37.5		8.7	32.7	22.4	Kb	8.9	23 11.6	7.2		8.5	43 2.2	2.6	K
9.5	38.6	19.2		8.7	44.1	43.6		9.5	46.8	22.3	K	9.5	36.8	52.9		9.5	12.6	44.3	
9.5	57.5	16.2		9.3	47.5	12.9		9.0	2 14.9	0.7	K	8.8	45.7	15.5	K	9.0	58.9	22.3	
9.5	11 18.2	4.3		8.5	38 1.3	9.4	K	9.3	3 1.5	22.0		9.6	47.3	2.8	B	8.8	59.0	7.1	K
9.3	12 8.8	40.6	K	9.2	22.3	7.0	K	9.5	10.4	15.3		9.5	24 9.0	14.2		8.8	44 15.1	16.8	K
9.5	13.2	30.7		9.5	34.9	54.5		8.4	58.4	56.6	K	9.5	51.1	6.9	B	9.4	29.3	15.5	
9.5	14.2	19.0		8.7	39 11.6	26.2	Kb	9.0	4 21.4	18.9	K	8.5	25 27.9	39.4	K	8.3	32.2	26.4	K
9.1	13 30.7	51.2		8.9	33.5	59.1	K	9.3	21.8	24.7	a	9.0	59.9	44.6	K	8.6	45.1	4.6	K
9.5	14 35.2	53.3		8.8	41 5.7	34.8	Kb	9.2	28.4	48.5	K	*9.5	27 3.3	11.4		9.3	59.7	30.2	
9.5	40.2	51.8		9.3	42 0.8	12.7		8.8	49.0	26.0	Kb	9.0	3.9	45.8	K	9.0	45 4.7	9.8	
7.7	16 2.8	21.7	K	8.7	43 29.3	43.4	Kb	8.3	5 3.0	39.2		9.0	12.4	41.8	K	9.5	5.7	53.4	
9.1	17 7.7	23.4	K	9.3	50.3	16.9		9.5	6 15.0	38.1		9.5	14.0	21.4		9.5	18.2	0.1	
9.5	34.4	20.7		9.5	44 44.9	1.8		9.0	36.9	53.1		9.5	42.3	41.5		9.5	28.2	44.5	
8.7	18 58.5	58.6	K	9.5	55.2	9.0		9.5	37.1	2.5		9.5	50.4	37.7		9.3	45.9	57.8	
9.5	19 2.7	32.5		9.3	45 43.4	14.4		9.5	44.1	48.0	R	9.4	28 8.5	1.6		9.3	46 29.8	50.6	
9.5	35.7	1.0		9.2	50.9	53.6	b	9.5	47.4	6.5		8.7	13.1	47.5	K	9.5	54.9	14.5	B
9.5	20 2.0	25.8		9.5	57.3	4.3		9.5	7 8.1	24.0		9.3	47.9	19.6		8.3	47 3.9	31.1	K
9.2	42.0	53.4		9.3	46 19.3	27.6		9.2	17.5	30.0	Kb	8.5	29 24.4	19.5	K	9.5	34.8	13.2	
8.8	21 18.5	38.1		9.0	48.2	46.4	K	9.1	17.8	49.5	a	9.5	27.1	30.2		9.5	48 6.6	9.6	
9.2	47.0	10.0	b	8.0	48.8	45.3	K	9.1	29.1	23.7	aB	9.0	36.8	12.5	K	9.3	13.5	9.1	
9.3	23 1.3	13.9		8.5	47 3.9	30.8	K	9.4	36.2	20.2		9.3	37.3	35.1		8.0	14.6	26.5	K
7.7	8.4	52.7	K	8.9	4.3	35.4	L	9.5	8 34.9	20.1		8.2	56.3	41.4	Kb	9.5	36.1	11.0	
8.0	10.1	39.9	K	9.5	31.0	33.5		9.0	43.4	5.3	K	9.5	30 10.8	58.0		8.7	38.2	38.1	K
9.5	24 19.4	29.0		9.5	45.5	37.6		9.5	9 14.3	23.9		9.5	13.8	41.2		9.0	39.8	23.6	
9.0	41.1	9.2		9.4	51.5	44.3		8.7	15.4	11.9	K	9.5	31 7.4	12.2		9.3	45.1	11.9	
9.3	25 10.1	44.2	B	9.0	48 10.5	26.2		9.5	18.7	54.4		9.5	13.1	51.1		9.5	49 12.3	20.9	
8.3	13.2	45.3	Lb	9.5	36.7	45.3		8.2	30.9	39.9	K	8.8	34.8	27.4		9.3	12.6	33.0	a
8.9	24.6	58.2		9.5	46.0	44.6		9.4	10 5.7	39.8	B	9.4	33 18.7	56.0	aB	9.0	12.7	16.3	
9.3	29.0	45.3	B	9.3	49 4.4	13.6		9.0	32.2	40.6	K	9.5	34.1	16.0		9.4	14.8	26.6	
8.8	34.2	10.8		9.0	44.7	27.8	K	8.9	46.0	6.8		8.8	34 21.4	11.1	K	9.3	20.0	56.3	
9.0	38.2	30.1		9.5	56.1	53.3		8.5	51.6	35.2	K	9.5	45.5	15.4		8.8	27.5	33.1	K
9.5	26 25.8	48.6		9.3	51 36.8	21.4		8.7	11 2.5	23.4	L	9.2	35 1.4	32.3		9.5	55.2	40.0	
8.5	27 1.0	51.7		8.2	56.5	12.3	K	9.4	12 7.5	25.6	B	9.4	4.1	13.7	B	9.5	50 23.0	44.6	
9.2	7.7	37.3	b	9.2	52 5.1	7.1		9.5	13.7	11.6		8.9	5.1	8.3	K	9.5	31.5	8.0	
9.3	15.8	19.4		9.0	44.5	51.2		9.0	13° 7.9	23.8		8.7	15.4	27.4	K	9.3	51 13.6	16.4	
9.5	21.9	33.8		8.9	46.5	54.6	K	9.0	12.5	7.3	L	9.5	17.2	14.5	B	9.5	25.4	34.8	B
9.5	28 15.6	14.3		9.5	53 5.8	43.0		8.9	33.7	6.7	K	8.0	43.8	59.3	K	9.5	26.5	53.9	
9.5	38 5	20.7		8.5	8.6	40.3	Kb	9.1	14 26.0	0.3		9.3	44.1	29.9		9.5	29.3	13.2	
9.2	49.9	51.9	K	8 8	28.3	7.6	K	9.5	26.4	4.5		8.3	46.3	41.7	L	9.5	31.5	41.1	
10 pr.	+ 31.51	+ 2.20		10 pr.	+ 31.58	+ 1.91		10 pr.	+ 31.64	+ 1.61		10 pr.	+ 31.68	+ 1.32		10 pr.	+ 31.72	+ 1.07	

709ª				
9.6	27	1.4	53.6	B

801—860					861—920					921—980					981—1040					1041—1100				
	4ᵐ—5ᵐ		+4°			5ᵐ		+4°			5ᵐ		+4°			5ᵐ		+4°			5ᵐ		+4°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	51	43.0	49.1		8.6	4	36.0	3.9	K	9.3	17	4.0	31.5		9.4	28	4.5	38.9	B	9.3	40	18.0	10.7	
8.9	52	7.5	0.5		9.5		46.1	55.0		8.5		35.9	3.7	K	8.2		9.4	55.8	K	8.7		19.1	55.3	
9.5		10.1	24.4		9.5		53.7	12.7		9.5		45.7	21.1		8.0		28.9	31.6	K	8.8		25.5	35.2	
9.5		15.7	30.5	B	9.0		59.5	36.4	Kb	9.5		51.0	3.4		9.3		35.3	18.9		9.5		32.9	8.0	B
9.2		16.2	16.4	K	9.5	5	1.0	7.6		9.5	18	2.5	47.5		9.5		46.2	37.1		9.5		42.5	42.0	
9.5		42.5	20.8		9.5		38.2	26.8		9.5		14.0	23.2		9.5		50.3	52.0		7.9		47.5	38.9	K
9.4		43.9	13.8	B	8.7		51.3	39.6	K	9.2		59.1	21.2	b	9.5		59.7	48.5	B	9.5	41	9.4	52.8	
8.5		47.8	53.3	K	8.4		58.3	2.2	K	9.2	19	1.0	37.8		9.2	29	5.7	26.2		8.2		28.2	9.3	K
9.5		58.9	12.3		9.3	6	14.7	6.5		9.3		30.5	43.2		8.0		31.8	40.3	K	8.7		37.8	18.3	K
9.5	53	6.8	30.8	aB	9.3		18.2	35.5		9.3		33.3	52.5		9.2		53.5	7.2	b	9.3		46.3	31.6	
7.0		7.2	21.9	Kb	9.3		19.3	23.3		9.3		34.3	2.6	R	9.0	30	0.0	35.1		9.4		47.7	5.9	
9.3		32.6	51.4		9.5		25.0	59.9		8.7		35.8	58.4	K	9.4		16.1	8.3	B	6.0	42	33.4	22.6	K
9.3	54	17.4	8.8		9.3		30.8	29.1		8.0		43.9	8.0	B	9.5		17.6	58.4		9.0		39.1	14.5	
9.5		26.0	46.9	aB	9.3		36.1	57.4		9.5		47.9	0.1		9.3		20.5	54.4	B	8.0		42.3	54.2	K
9.5		30.7	40.7		9.3		36.3	39.4		8.5		54.3	42.4		8.3		34.1	50.8	K	9.3	43	2.8	9.1	
9.5		40.3	56.0		9.3		53.8	57.1	a	9.5	20	2.8	58.3		9.2		46.6	9.1	aB	9.3		6.4	29.6	
9.0		45.2	5.9		6.0	7	3.0	59.1	Lb	9.4		30.1	7.9	B	9.2	31	6.5	46.9		9.0		17.6	10.9	K
9.0	55	0.9	23.2		9.3		9.1	32.1		8.8		34.3	20.0		9.0		21.2	3.1	K	9.3		18.4	23.0	
9.6		44.0	19.5	B	8.9		22.7	43.5		8.5		54.5	49.7	K	8.8		26.0	35.6		9.0		24.5	15.4	
9.2		51.6	30.7	K	9.3		27.3	30.8		9.0	21	2.2	54.2	K	9.2		28.0	15.3		9.2		28.7	3.8	
9.2		52.3	11.6		8.9		27.8	1.5	K	9.0		4.4	39.8		9.3		29.5	10.9		9.5		29.0	24.7	
9.5		53.5	32.1		8.0		33.1	5.5	K	9.5		13.7	4.5		5.0		34.0	1.8	K	9.1		36.0	53.0	a
9.5		53.7	57.4		9.5	8	5.3	28.1		9.5		55.1	48.6		8.2	32	4.1	21.0	K	8.6	44	6.7	18.9	K
9.5	56	5.5	19.4		9.5		7.4	34.3	B	9.3	22	14.6	8.5		9.4		42.6	18.1		9.5		9.8	13.0	
9.1		6.0	27.8	K	9.2		31.9	2.3		9.1		29.7	15.8		8.9		48.8	55.0	K	9.5		13.2	9.5	B
9.5		44.3	47.0		9.5		40.3	29.9	B	9.3		31.4	22.2		9.5		50.3	27.6		9.5	45	7.9	22.5	
9.4		55.9	50.6		9.5		53.6	20.8		9.5		31.5	57.6		7.6	33	3.0	59.5	K	9.5		24.4	20.0	
9.3	57	8.3	12.1		9.3	9	8.0	36.2		8.9		34.7	46.3		8.5		15.6	4.4	K	8.5		29.5	3.6	L
8.7		42.7	23.1		8.7		13.5	30.0	B	7.4		41.5	5.1	K	8.6		28.9	9.6	K	8.9		29.9	56.8	
9.5	58	32.0	9.5		9.5		47.1	27.8		8.9	23	2.0	53.7		9.2	34	3.5	27.4	b	9.2		33.4	29.0	aBb
9.3		33.0	58.1		8.3		58.7	31.5	S	9.3		7.3	7.9		9.2		5.1	10.6		9.5	46	30.7	30.2	
9.4	59	1.3	2.7		9.5	10	20.3	37.0		9.0		13 8	18.0	K	8.2		11.2	54.0	K	9.5		32.4	2.5	
9.2		15.0	30.3		8.5		45.4	59.2	K	8.5		17.0	33.4	K	9.5		18.6	16.7		8.7		44.7	3.5	K
9.5		18.5	56.7		9.4		48.4	41.5		9.6		28.9	2.5		9.5		18.8	26.9		8.7	47	38.1	40.4	K
8.8		31.8	52.0		8.5		50.1	52.2	K	9.5		30.7	10.4		9.2		53.1	6.1		8.4		55.9	42 6	Kb
9.0		41.4	39.3		9.0		53.0	0.9		9.5		37.1	43.1		9.0	35	5.3	46.3		8 8	48	18 5	43.4	
9.4		44.0	3.1		9.5	11	29.1	12.2		8.5		47.7	11.9	K	9.3		34.0	42.5		9.3		31.5	20.1	
9.5		50.2	10.1		9.5		36.1	19.6		8.5		56.4	25.2	K	9.3		38.0	35.5		8.8		35.2	52.8	
9.0		55.0	23.6	K	*9.5	12	20.0	22.8		8.5	24	3.9	58.1	K	9.5		40.8	54.2		9.5		49.5	44.9	
8.4		56.2	20.4	K	9.5		31.9	5.4		9.5		12.1	40.7		9.4		49.8	20.7	B	9.5		58.4	38.6	
9.0	0	14.5	44.8	K	9.1		34.1	55.0	a	9.5		16.4	17.0		8.9		51.7	26.0	K	9.3	49	5.8	48.0	
9.3		21.4	46.5		9.3		39.2	41.6		9.5		19.7	29.0		9.5	36	24.1	46.5		8.1		45.4	58.5	Kb
9.5		23.4	27.7		9.5	13	4.6	58.9		9.5		43.0	5.9		9.5		33.0	55.5		9.5	50	4.4	28.6	
9.5		27.6	0.6		9.3		8.0	57.9		9.5		47.6	16.5		9.5		37.5	56.0		9.5		27.1	12.6	
9.4		49.2	12.0		8.7		23.3	19.6	K	9.5		55.5	54.1		8.0		50.9	16.5	K	9.5		51.0	27.1	
9.5	1	26.5	17.1		9.3		33.0	19.0		9.3	25	12.9	24.0		9.5	37	11.3	26.5		9.3		53.5	57.6	
9.0		37.2	23.3	K	9.5		35.8	31.8	B	9.3		18.0	7.9		9.5		27.7	25.8		8.7		56.6	28.5	B
9.4		45.2	58.5		9.5	14	11.6	32.1		9.3		26.0	24.0		8.6		38.9	46.3		9.3	51	10.3	18.4	B
9.2		52.2	1.3	b	9.5		12.2	5.3		9.5		31.6	2.8		9.5		53.1	0.3		8.6		18.5	50.8	Kb
9.3	2	13.6	38.4	B	9.2		34.1	39.7	b	9 3		56.7	35.5		9.2		53.4	5 6	aB	8.3		35.5	26.8	K
9.3		13.8	41.9		9.5	15	24.2	5.7		9.5	26	5.0	5.3		9.2	38	1.5	17.3		9.5		46.2	54.5	
9.4		25.1	34.8		9.5		37.9	36.7		9.5		17.7	23.6		9.2		5.1	36.5		9.5		46.5	40.7	
9.3		46.4	53.7		9.5		41.1	2.9		9.3		18.3	3.0		9.5		14.7	21.1		8.8		58.2	19.5	K
9.3		54.0	13.7		8.6		55.7	30.7		9.5		28.0	0.6		9.5		56.6	44.0		9.3	52	11.8	10.5	B
9.5	3	40.1	36.3		9.5	16	2.4	7.7		8.8		36.5	42.8		8.8	39	14.4	10.5	K	9.0		12.5	28.3	K
8.7		50.6	42.2		9.3		15.6	33.7		9.0		59.3	16.1		9.5		41.4	27.0		8.8		24.8	12.7	K
9.2	4	4.1	8.8	K	9.0		23.8	21.8		9.5		59.5	35.9		8.6		49.8	17.1	K	8.3		32.8	49.2	K
7.8		4.5	13.6	K	9.1		42.3	24.5		9.3	27	33.5	58.0		7.5		50.5	2.0	K	9.0		48.8	54.6	K
9.2		20.0	15.6		9.5		43.8	37.7		8.9		47.9	44.4	K	8.3		58.0	47.3		9.5		49.0	7.3	
9.5		27.3	26.7		8.9	17	1.4	2.1		9.4		50.6	2.7		9.5	40	2.8	24.8		8.7		58.4	38.1	L
		+	+				+	+				+	+				+	+				+	+	
10pr.		31.74	0.86		10pr.		31.75	0.73		10pr.		31.76	0.54		10pr.		31.77	0.38		10pr.		31.77	0.20	

898ᵃ				
9.5	12	15.4	23.3	B

-6ᵐ +4°

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5ᵐ −6ᵐ	+4°				6ᵐ	+4°				6ᵐ	+4°				6ᵐ	+4°				6ᵐ	+4°	
m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′	
9.5	53 2.0	3.8			9.5	4 27.6	57.5			9.3	13 44.3	41.7			9.2	22 47.8	51.1	K		9.1	29 5.2	48.3	K
9.0	48.1	53.8			9.5	29.3	47.4			9.5	54.2	50.8			8.2	49.0	25.6	K		9.5	5.3	43.8	
9.3	54 5.5	51.9			8.1	32.5	42.1	K		9.5	14 19.7	41.6			9.1	52.0	47.1	aB		9.5	9.0	10.6	
8.8	29.8	34.2			9.5	38.1	33.4			9.5	23.0	56.0			9.3	56.3	22.9			9.5	11.6	55.4	aB
9.3	33.1	21.8			9.5	38.7	44.1			9.3	23.2	10.1			9.2	23 4.4	41.7			9.5	11.9	58.6	
9.5	56.0	52.7			9.4	59.8	59.6			9.5	25.4	28.2			9.0	11.0	44.8	K		9.0	17.7	48.6	K
9.3	59.3	4.3			9.5	5 11.0	33.3			8.9	37.6	23.1			9.5	18.9	57.5			9.0	18.8	49.2	K
9.3	55 13.5	21.6			9.2	15.9	53.1			9.3	45.5	8.9			8.3	20.7	36.7	K		9.3	27.0	46.4	
9.5	51.3	3.6			9.2	31.8	58.4			7.5	15 4.7	16.6	Kb		9.5	22.1	25.6			9.4	31.0	59.4	
8.4	58.6	18.7	K		9.5	36.8	47.6			8.5	7.7	34.7			8.9	35.0	43.6	K		9.1	35.3	6.8	b
9.5	56 4.4	58 5			9.2	58.7	18.3	K		9.4	28.8	49.1			8.5	38.8	56.1	K		9.5	39.4	42.6	
9.5	33.8	58.8			9.5	6 15.8	51.3			9.3	35.4	11.0			9.5	45.8	44.3			9.5	42.3	40.2	
9.0	43.7	47.1	K		9.4	45.5	1.3			9.4	40.3	39.3	B		9.4	46.0	50.5			9.4	48.4	9.1	
9.5	47.8	4.3			7.8	49.5	34.6	L		9.0	49.5	41.7	B		9.1	48.3	35.9	a		9.5	30 13.1	44.0	
9.2	57 14.1	36.2	K		9.3	7 13.0	5.0			9.5	52.6	56.2			9.3	51.7	56.4	a		8.5	17.0	23.1	
6.0	20.0	9.5	K		9.3	13.6	35.5			4.9	16 4.3	39.9	L		8.9	55.8	36.8	K		9.2	21.5	12.1	
9.5	32.7	33.2			9.5	45.3	33.3			8.2	4.8	40.5	L		9.5	55.9	26.1			8.8	23.8	21.8	
9.3	51.3	59.0			9.0	45.3	6.8	K		9.3	6.9	52.2			9.5	24 12.6	20.2			9.5	36.5	5.7	
9.3	57.6	48.3			9.3	8 3.9	45.5			9.4	29.5	21.7	B		9.2	18.8	57.4			9.5	37.4	26.9	
9.5	58 10.7	13.8			9.3	6.1	51.4			7.8	51.3	15.8	B		9.3	20.5	12.3			8.5	41.7	44.8	K
9.3	28.1	35.3			7.0	8.9	19.6	K		8.7	56.1	33.2			9.5	24.7	37.1	a		8.2	48.5	43.9	B
9.5	56.5	12.6			9.4	15.0	34.4	B		8.2	17 9.2	56.7	K		8.5	28.9	54.0	K		9.3	51.4	14.1	
9.1	59 1.6	59.0	ab		8.9	15.1	25.0			9.4	11.4	53.8			9.5	34.6	17.0			8.8	55.3	45.7	K
9.5	25.5	7 2			9.4	17.0	30.8			9.3	21.3	5.4			7.0	38.1	56.5	K		9.4	56.6	23.8	
9.5	35.4	35.8			9.2	17.2	14.5	K		9.3	24.9	55.8			9.5	52.5	50.9			7.5	31 8.4	49.7	Kb
9.5	38.4	28.8			9.2	42.3	27.3			9.4	33.0	58.2			9.5	25 6.2	22.3			8.4	25.8	3.5	L
9.3	57.9	7.0			8.9	52.7	2.6			9.2	35.8	45.2	aB		9.4	21.5	42.5	B		9.4	26.9	0.3	
8.7	0 1.1	25.3			9.5	9 18.1	56.8			9.3	43.1	36.6	B		9.5	25.8	54.3			9.5	30.8	36.9	
9.0	17.0	0.3			9.5	35.0	6.5			9.2	56.0	56.0			9.3	26.9	12.2			9.0	37.3	1.1	
9.0	28.7	6.5			9.2	41.0	41.2			9.2	18 1.6	15.0	K		9.3	27.0	58.6			8.9	42.9	10.7	L
8.5	28.8	59.3			9.5	42.7	20.6			8.5	13.1	36.6	L		9.5	29.5	23.4			9.5	43.6	32.9	
8.5	32.9	55.7			9.5	54 3	57.5			8.5	17.4	30.3	L		9.4	30.7	42.5	B		9.5	58.2	14.9	
9.5	49.1	2.0			8.8	10 7.3	45.1	Kb		8.2	44.3	10.8	K		9.3	32.7	4.7			9.0	32 9.5	51.6	
9.3	1 3.1	50.5			8.8	13.8	24.6	K		8.9	57.6	54.4			9.0	38.5	45.1	B		8.7	14.8	19.5	K
9.3	19.8	0.3			9.4	36.6	14.3	R		8.5	19 13.4	8.9	K		9.5	49.0	57.2			9.5	19.4	49.6	
9.4	38.6	46.6	aB		7.8	37.9	2.3	L		8.7	16.2	14.4	K		9.0	58.6	20.2			9.5	23.7	53.6	
9.4	43.1	46.8	aB		9.5	38.1	53.8			9.2	29.7	54.0			9.4	26 2.4	52.1	aB		9.5	45.6	59.0	
9.3	45.2	16.9			8.0	51.0	34.0	K		9.5	34.6	47.0			8.5	10.1	37.5	K		9.2	48.0	44.7	
9.2	48.2	11.3			9.5	53.9	56.4			9.5	36.7	28.8			8.7	13.5	46.3	K		9.3	49.5	55.2	
9.5	54.6	21.7			8.8	11 10.7	36.7	K		9.5	45.3	36.7			9.4	15.9	46.5	B		9.3	50.7	18.5	
8.2	56.0	44.5	K		7.8	18.8	14.4	K		9.2	45.4	48.6			9.5	18.4	0.6			8.8	59.9	37.3	K
9.2	57.6	48.5	aB		9.5	44.0	8.2			9.5	49.2	7.0			9.5	26.6	53.9			9.3	33 6.7	49.2	
9.5	2 9.7	57.6			9.4	58.5	17.9	B		9.3	51.3	16.7	K		9.3	31.7	50.6	aB		8.8	16.1	35.5	K
9.5	10.1	18.7			9.5	12 3.6	7.1			8.9	20 13.0	53.1			9.3	32.5	26.8			9.5	20.2	30.8	
9.5	25.5	52.6			8.7	5.3	39.8			9.5	15.4	41.3			9.2	42.2	16.2	R		9.5	24.5	37.7	
9.4	26.1	0.2			9.2	6.1	14.3	B		9.5	22.4	59.0	aB		9.5	48.3	24.7	a		9.5	29.2	25.1	
8.7	26.9	44.1	K		8.5	7.2	41.5	L		8.8	36.1	22.4	K		9.0	55.9	27.5			9.5	33.0	34.8	
9.5	28.1	0.6			9.4	7.9	11 0			9.0	46.5	29.9			9.2	58.6	0.6			8.4	34.3	16.7	L
9.5	33.1	0.2			9.1	22.1	58.0	a		9.4	59.0	57.8			9.4	27 9.8	48.2			9.3	36.1	46.9	
9.5	33.9	52.7			9.5	33.9	1.8			9.3	59.3	54.3			9.4	10.8	50.2			9.3	41.1	48.6	
9.0	3 20.4	32.3	K		9.0	35.4	27.2			9.3	21 11.9	30.2	a		8.3	36.5	4.7	K		8.9	44.2	8.6	
9.5	27.3	42.3			9.2	40.4	13.3			9.5	39.6	31.8			9.0	46.1	34.7			9.3	46.0	47.5	
9.0	30.3	4.2			9.5	41.2	38.5			9.5	40.2	48.9			9.5	28 0.0	24.5			9.3	50.3	35.3	B
9.5	44.1	26.6			9.4	43.8	33.6			8.2	46.5	20.6	K		9.5	18.5	27.7			9.4	51.1	5.1	
9.5	46.4	55.4			9.1	59.3	1.4	K		9.4	49.2	22.9	B		7.5	19.5	37.2	B		9.0	52.7	21.7	
9.5	53.6	17.4			8.8	13 1.7	59.8			9.2	54.3	33.7	K		9.4	22.7	53.3			8.9	55.3	36.9	K
9.5	4 6.0	29.2			9.5	14.6	36.6			9.3	22 18.4	42.1			9.5	23.1	25.8			9.1	34 3.1	32.5	K
9.5	10.6	14.6			9.5	22.9	3.7			9.5	19.5	1.8			9.5	42.8	59.2			9.2	5.0	49.8	
9.4	18.5	54.8			9.5	38.4	23.0			9.3	34.0	32.4	K		9.4	29 0.3	0.7			8.8	14.2	16.2	
9.5	20.7	7.4			9.2	38.5	2.1	K		9.5	36.3	38.2			9.5	2.7	30.4			9.4	26.2	31.2	
	+	−				+	−				+	−				+	−				+	−	
10pr.	31.77	0.00			10pr.	31.77	0.34			10pr.	31.77	0.26			10pr.	31.77	0.36			10pr.	31.76	0.46	

1401—1460

m	6ᵐ	+4°	
9.5	34 26.5	28.6	
9.5	27.2	17.3	
9.5	31.0	36.0	
9.5	35.9	46.9	
9.5	43.6	25.8	
9.5	57.9	51.6	
9.5	35 5.0	31.7	
9.5	7.1	36.1	
9.2	9.9	43.1	*b*
9.5	27.5	10.7	
9.5	35 41.2	28.4	
9.5	43.9	57.2	
9.5	55.6	57.7	
6.4	59.8	4.2	L
9.0	36 22.7	1.1	
9.5	24.4	20.8	
9.0	28.0	31.4	
9.5	31.2	42.7	
9.5	37.8	13.6	
9.5	37 6.8	0.5	
9.2	8.5	31.1	
8.9	16.3	15.0	
8.3	18.9	23.2	L
8.8	26.6	38.0	
9.3	33.7	0.4	
9.2	36.8	13.3	K
9.5	50.7	28.9	
9.0	52.1	32.0	
8.0	53.6	44.3	L
9.2	38 5.9	10.5	K
9.5	13.1	3.4	
9.5	14.0	42.6	
9.3	26.0	9.4	
9.5	29.8	19.4	
9.5	44.2	2.0	
9.0	51.3	48.7	
9.5	55.4	16.5	
9.5	56.9	4.1	
9.3	39 1.8	2.8	
8.5	3.1	30.7	Kb
9.5	6.5	59.6	
9.5	27.6	7.3	
9.5	58.0	45.6	
9.4	59.1	52.1	
9.5	40 2.7	19.7	
8.2	6.9	36.3	K
9.3	11.9	49.4	K
9.5	22.0	13.9	
9.5	32.0	7.2	
9.5	37.6	18.1	
9.4	40.1	2.2	
9.0	51.0	0.5	
9.0	41 0.2	41.5	K
9.5	0.3	22.4	
9.5	2.4	16.6	
9.4	9.1	53.4	
9.4	15.4	9 9	
9.2	30.7	12.9	*a*B
9.2	32.5	40.6	*a*
9.2	34.0	29.8	
	+	−	
10 pr.	*31.76*	*0.55*	

1461—1520

m	6ᵐ	+4°	
9.3	41 36.2	27.2	
9.5	49.2	13.6	
9.3	55.2	30.4	
9.5	42 6.4	23.9	
9.1	13.1	43.1	
9.5	13.7	46.3	
9.5	18.2	27.1	
9.5	24.9	55.8	
9.5	27.3	41.9	
9.0	35.9	43.2	
8.8	40.0	19.6	K
9.2	43 14.5	13.3	
9.3	49.0	58.8	
8.9	50.6	8.4	
9.2	44 1.0	23.0	
7.9	16.0	55.6	K
9.0	28.5	15.4	
9.5	35.0	15.6	
9.5	50.6	1.7	
9.0	50.8	17.3	
9.5	51.0	22.4	
9.5	55.4	58.8	
9.0	45 1.9	46.2	
9.5	10.7	42.0	
9.4	14.0	8.2	
9.1	17.0	9.0	
9.1	41.5	16.2	
9.3	46.8	52.9	
8.3	51.0	20.8	
9.5	59.7	5.5	
9.5	46 1.6	48.7	
8.9	4.2	54.3	
9.4	9.4	52.5	
9.5	15.5	52.5	
9.5	18.4	6.5	
9.5	23.3	21.8	
9.3	25.9	54.6	
9.5	33.5	56.2	
9.1	39.2	13.3	*b*
9.0	48.4	38.2	
9.5	52.5	59.1	
8.5	54.7	38.7	
9.3	47 17.7	19.6	
9.4	21.2	44.5	
9.5	22.8	0.6	
8.6	26.6	48.6	Kb
9.3	39.7	3.8	
9.2	59.8	39.3	
9.3	48 0.1	39.9	
9.4	4.9	9.7	
9.5	37.3	53.5	
9.5	45.2	40.5	
9.0	45.8	8.3	K
9.5	56.4	23.9	
9.2	49 6.0	54.7	
9.5	16.7	38.2	
9.5	26.4	48.5	
9.3	50 9.5	35.0	
9.5	17.7	40.7	
9.3	29.2	44.4	
	+	−	
10 pr.	*31.75*	*0.67*	

1521—1580

m	6ᵐ	+4°	
9.3	50 29.8	4.8	
7.7	39.3	5.2	L
9.5	58.7	54.5	
9.4	51 1.1	26.7	
9.3	6.1	40.5	
9.4	17 9	11.4	
9.4	22.1	9.2	B
9.5	22.3	2.5	
9.0	33.0	38.5	K
9.5	39.6	37.3	
9.4	42.9	9.5	
9.2	43.2	20.7	
9.1	46.1	28.2	K
9.5	55.9	15.2	
9.5	52 2.5	47.0	
8.1	18.7	16.6	K
9.0	24.8	24.0	K
9.5	36.0	33.2	
9.4	36 1	0.4	
9.5	36.7	40.3	
9.4	44.8	57.7	
9.3	48.4	23.3	
9.3	50.0	55.0	
9.1	50.7	17.4	K
9.3	53 8.3	6.3	
9.2	23.4	52.7	K
9.3	25.6	6 6	
9.4	30.8	55.3	
9.5	36.8	33.6	
9.5	39.7	16.5	
9.0	42.8	50.6	K
9.5	54 6.7	5.5	
9.0	21.2	11.0	
9.0	23.5	28.3	
9.5	24.8	55.3	
9.5	36.7	12.5	
9.5	52.3	3.8	
9.3	54.8	44.1	
9.1	55 5.9	53.0	K
9.5	13.8	33.8	
9.5	37.2	26.3	
9.0	56 11.4	24.5	
9.5	12.9	39.6	
9.5	18.8	54.9	
9.5	25.9	18.9	
8.0	40.3	13.6	K
8.2	42.3	47.2	*B*
9.5	46.9	26.4	
8.4	52.5	3.6	K
9.3	58.9	35 8	
9.5	57 4 7	14.2	
9.5	20.5	26.3	
9.3	26.4	19.8	
9.5	32.6	11.1	
9.5	36 3	4.0	
9.5	39.0	36.0	
9.5	53.1	3.5	
9.5	54.4	34.4	
8.0	58.7	10.3	K
9.2	58 11.7	22.0	
	+	−	
10 pr.	*31.75*	*0.78*	

1581—1640

m	6ᵐ–7ᵐ	+4°	
9.1	58 13.2	57.0	*a*
9.3	13.6	49.0	*a*B
9.5	23.2	13.4	
9.5	38.1	44.6	
9.2	41.7	3.1	
9.5	46.6	40.0	
9.5	47.0	23.4	
8.4	59 7.4	56.0	
9.5	13 5	20.1	
9 0	29.0	8.6	
9.1	32.0	5.4	*a*
9.5	44.8	30.3	
9.5	0 2.7	48.3	
9.5	18.4	33.1	
8.7	20.0	26.2	K*b*
9.2	21.1	53.0	K
9.3	39.5	7.3	*a*
8.7	52.9	37.8	K
7.8	57.3	24.3	K
9.0	1 0.7	1.8	
9.0	8.4	42.7	
9.5	24.0	21.2	
9.2	25.5	50.8	K
9.5	29.0	22.6	
9.4	33.4	24.0	
9.5	41.7	58.4	
9.3	51.2	9.9	*a*
9.5	55.4	20.6	
9.5	2 16.1	42.2	
9.5	21.2	45.1	
9.5	35.9	28.6	
9.0	37.5	7.1	
9.5	39.6	40.2	
9.5	3 6.8	32.9	*a*B
9.3	14.6	9.6	
9.4	20.9	12.1	
9.0	46.2	33.4	
9.5	4 26.1	33 5	
9.5	46.7	16.5	
9.5	56.8	7.2	
9.3	59.2	4.7	
9.5	5 5.1	19.5	B
9.0	27.4	34.8	
9.0	38.9	5.2	
9.3	40.8	12.9	
9.2	58.2	22.2	
8.1	6 23.0	49.4	Lb
9.5	26.1	34.6	
9.5	28.7	52.8	
9.2	29.3	11.5	*a*B
8.7	34.5	27.4	
9.5	37.4	28.9	
9.0	49.4	28.4	
8.6	7 5.2	5.1	K
8.5	8.1	24.4	K
9.3	10.7	46.7	
9.3	17.5	44.4	
8.7	34.2	44.5	K
9.5	36.3	41.4	
9.2	52.4	45.5	
	+	−	
10 pr.	*31.74*	*0.90*	

1641—1700

m	7ᵐ	+4°	
9.5	8 14.5	23.5	
9.5	33.2	50.9	
8.8	40.8	59.6	K
9.3	43.0	19.0	
9.4	56.8	25.0	
9.5	9 1.3	1.2	B
9.5	8.9	35.0	
8.7	16.2	52.2	K
9.0	20.1	45.2	
9.3	22.8	51.4	
9.5	58.1	25.9	
9.1	10 25.2	36.1	
8.9	37.4	37.0	B
8.2	51.8	19.0	K
9.3	57.2	23.9	
8.3	57.9	12.2	K
9.3	11 3.8	3.1	B
8.8	19.5	1.5	K
8.8	33.8	4.0	K
9.5	52.8	3.0	
9.5	52.8	6.2	
9.5	12 1.9	34.0	
9.4	19.7	34.9	
9.2	24.3	49.9	*a*
8.5	25.0	2.0	K*b*
9.3	13 20.7	39.8	
8.8	25.5	19.6	
8.8	31.4	50.2	K
9.3	32.1	31.7	
8.7	34.1	33.2	*B*
9.4	51.5	21.8	*a*
9.4	56.2	59.6	
9.0	58.3	21.7	
9.0	14 14.2	28.0	
8.5	32.5	26.7	K
9.0	35.4	45.3	B
8.4	36.5	56.5	K
9.5	43.3	54.9	
9.3	54.9	57.9	
9.0	15 2.2	41.9	B
9.5	19.1	31.2	
9.5	30.9	39.8	
9.5	42.4	0.7	
8.7	16 15.7	50.6	K
9.0	15.8	1.0	
9 3	44.7	34.0	
9.5	17 11.2	8.3	
9.3	16.6	53.4	
8.5	18.3	23.9	
9.3	22.5	1.0	*a*
8.9	24.7	38.9	
9.4	32.5	39.0	
8.8	47.5	51.0	K
9.4	54.9	7.5	
8.0	18 6.1	43.6	K
9.4	28.8	21.8	B
8.8	31.5	17.6	
9.2	49.3	57.2	*a*B
8.8	59.8	39.8	
9.5	19 1.7	51.3	
	+	−	
10 pr.	*31.72*	*1.06*	

7ʰ – 8ʰ +4°

1701—1760

m	7ʰ ′ ″	+4° ′	
9.4	19 12.2	29.8	
9.3	25.8	13.8	
9.5	40.7	20.6	
9.5	55.2	8.5	B
9.0	59.9	54.5	K
9.0	20 8.5	32.5	
9.0	12.8	42.3	
9.5	17.7	4.7	
9.5	23.1	7.8	
9.5	27.2	20.3	
8.8	37.8	18.7	K
9.0	41.5	23.5	K
9.2	45.9	2.9	
8.4	48.5	26.0	K
8.2	21 27.3	5.7	K
9.5	33.5	15.5	
9.5	44.5	45.3	
9.3	22 9.9	39.9	
9.5	24.4	14.8	
9.4	29.4	46.0	αB
9.2	35.7	14.5	
8.5	57.5	51.0	
8.5	23 2.2	16.6	Kb
8.5	4.8	39.5	
9.5	18.6	16.2	
9.0	30.5	21.8	
9.0	31.7	25.6	K
8.8	33.3	35.0	
8.5	39.2	54.1	K
9.0	24 7.7	19.7	
9.5	14.6	44.5	
8.8	27.5	48.5	K
9.5	29.5	22.9	
9.5	30.3	29.4	
9.5	51.2	3.1	
9.0	25 3.5	51.0	
9.0	11.3	0.3	
9.0	16.8	34.5	
9.5	20.9	8.9	
9.5	33.5	25.6	
9.3	36.7	20.8	
9.5	46.8	54.0	
9.0	56.2	4.0	K
9.4	26 0.8	33.1	B
9.1	22.9	33.1	αB
9.5	23.3	27.3	
9.5	36.5	11.0	
9.5	57.7	54.4	
9.4	27 0.4	57.9	
9.5	14.5	21.1	
7.3	19.7	45.1	K
8.0	55.5	17.6	K
9.0	57.5	29.8	
9.5	28 2.6	37.0	
9.1	43.3	49.7	αb
9.5	50.5	48.1	
9.3	29 12.8	23.9	
9.5	27.8	46.3	αB
9.4	30.0	44.3	
9.5	32.9	38.6	B
	+	−	
10pr.	31.70	1.19	

1761 — 1820

m	7ʰ ′ ″	+4° ′	
9.4	29 39.3	11.3	αB
9.0	51.2	11.5	B
8.8	30 10.0	51.7	Kb
9.5	10.7	2.2	B
9.2	12.9	42.4	
8.8	30.4	57.7	
9.2	36.6	0.9	
9.3	42.4	3.6	
8.8	45.0	21.9	K
8.8	58.7	58.0	K
9.5	31 6.0	57.3	
8.8	47.6	6.5	
9.0	47.8	22.0	
9.0	56.5	49.7	
8.8	32 6.7	27.2	
9.4	24.7	26.0	
8.8	36.5	23.5	K
9.5	37.0	12.8	
9.0	45.6	56.2	
9.3	33 8.2	57.5	
8.0	13.5	23.8	K
9.3	18.2	25.8	B
9.0	19.5	31.5	
9.2	21.3	9.6	
9.5	45.5	56.9	
9.5	47.8	28.1	
9.4	56.5	16.2	
8.2	34 8.4	43.7	B
9.0	19.2	59.2	
9.0	21.3	24.9	
9.0	46.1	23.5	
9.3	53.8	56.5	
8.2	35 8.0	23.2	B
9.0	14.5	26.2	
9.4	14.5	35.1	
9.5	14.5	57.7	
9.3	34.8	7.3	
9.2	42.7	44.1	αB
9.4	45.3	43.7	
9.4	36 5.9	47.6	
8.8	9.1	29.7	
9.4	12.7	42.7	
9.5	33.3	14.5	
9.5	43.2	36.0	
9.5	46.5	17.0	
9.5	37 9.2	2.0	
8.6	16.6	45.8	
9.0	18.2	26.3	
8.8	41.5	13.1	Kb
9.0	44.5	36.7	
8.8	38 9.4	3.1	
8.3	13.2	38.5	
8.5	32.6	1.2	K
9.5	39.8	4.8	
9.2	54.2	4.1	
8.2	57.3	28.7	B
8.9	39 18.8	55.2	
9.0	20.2	53.0	
9.0	27.2	20.0	
9.5	36.8	27.3	
	+	−	
10pr.	31.68	1.34	

1821—1880

m	7ʰ ′ ″	+4° ′	
9.5	39 49.7	44.0	
9.0	54.0	45.8	
8.8	40 3.2	9.6	
9.2	27.8	1.7	
9.4	29.5	46.2	
7.1	41 21.5	40.0	K
9.0	29.8	17.4	K
8.6	48.0	6.6	Kb
9.3	42 1.5	33.3	
8.8	9.7	29.4	
9.0	19.1	21.0	
9.5	54.7	25.3	
7.1	43 12.4	49.0	Kb
8.8	23.1	53.3	
9.0	28.3	40.5	
9.5	37.4	17.8	
9.5	38.9	32.8	
9.0	52.5	9.6	
9.3	44 0.2	31.6	B
9.5	6.7	44.6	
9.3	8.7	31.9	B
9.4	38.0	0.3	
8.5	45.0	12.3	K
9.0	45 12.9	13.0	K
9.3	14.6	3.3	
9.3	17.8	45.7	
9.2	50.9	26.8	b
9.4	51.9	43.8	B
8.5	46 22.7	7.4	K
9.4	29.2	1.3	
9.5	34.9	53.0	
9.5	52.0	39.1	
9.5	47 18.5	53.5	
9.2	22.4	15.4	
9.5	51.9	12.6	
9.0	48 5.6	52.0	
9.2	9.9	19.6	b
9.0	28.8	38.7	
8.2	44.4	37.7	L
7.0	47.6	51.2	L
8.4	51.7	58.2	L
9.0	50 13.4	54.3	L
9.5	18.0	3.7	
9.0	18.3	15.5	K
9.5	44.3	50.5	
9.0	54.7	28.6	
9.0	51 10.7	57.9	
9.5	13.4	50.4	
9.2	20.6	5.3	
9.3	32.0	35.1	
9.0	43.1	52.1	
9.5	43.1	13.7	
9.4	55.4	12.4	B
9.4	52 2.7	40.5	
9.1	26.4	48.1	α
9.0	31.9	34.8	
9.5	53 14.7	6.7	
9.2	20.6	30.7	
9.0	59.5	30.9	
8.0	54 17.2	56.3	K
	+	−	
10pr.	31.66	1.50	

1881—1940

m	7ʰ —8ʰ ′ ″	+4° ′	
9.0	54 28.5	58.0	K
8.5	46.4	33.2	K
9.5	52.6	6.2	B
9.3	55 0.5	56.1	
9.2	10.4	22.0	Kb
9.3	23.4	33.1	
9.5	48.9	34.5	
8.8	56 10.4	25.8	
9.3	17.2	20.3	
8.8	23.5	25.5	K
8.5	24.0	42.1	
9.1	29.4	54.0	α
8.9	39.6	58.9	
9.3	45.4	33.5	
9.3	57 2.8	43.2	
8.0	15.4	32.8	K
8.2	18.4	26.5	K
8.8	24.4	26.8	K
9.3	24.9	45.3	
9.5	59.9	53.3	
9.5	58 0.1	14.9	
8.7	3.4	44.1	B
8.9	9.9	40.7	B
9.5	38.3	23.0	
9.5	39.7	3.7	
9.5	57.5	29.0	
9.3	59 30.6	12.7	
9.2	33.8	51.1	b
9.3	0 9.3	2.7	
9.3	9.4	53.6	
8.5	10.5	25.4	K
9.0	14.8	37.6	
9.0	20.1	15.7	
9.3	35.8	23.8	
9.3	48.4	33.5	
9.5	1 21.1	18.9	
9.3	25.9	32.5	
8.8	33.9	12.3	
9.3	40.7	58.2	
9.2	2 4.8	1.8	B
9.3	23.9	29.3	α
9.0	32.4	27.2	
8.5	57.9	14.7	
9.5	3 11.4	54.3	
9.0	13.9	52.6	
9.5	38.5	21.3	
9.0	40.4	27.9	
8.5	48.3	48.1	Lb
9.3	49.4	21.3	B
9.5	59.6	10.9	
9.3	4 9.1	2.2	B
8.0	11.4	41.8	K
9.0	47.4	13.7	
~~8.8~~	~~5 59.4~~	~~33.2~~	
9.0	6 9.3	59.1	
8.9	46.0	33.2	B
9.4	47.6	32.9	B
9.4	48.7	32.3	B
9.0	7 13.4	17.9	
9.5	44.4	24.1	
	+	−	
10pr.	31.63	1.67	

1941—2000

m	8ʰ ′ ″	+4° ′	
9.3	7 57.5	45.7	
9.5	8 17.2	58.1	
8.5	30.4	14.5	B
8.3	41.9	29.7	
7.0	9 41.3	39.0	K
9.0	58.9	21.0	
9.5	10 6.0	28.2	
8.5	46.4	50.3	
9.3	47.4	43.2	
9.5	58.9	51.2	
9.5	11 8.4	37.0	
9.5	55.6	6.5	
9.0	12 10.9	41.4	
6.7	12.8	23.4	L
9.3	42.8	33.7	
9.0	13 27.5	6.0	K
8.5	33.8	49.7	K
8.2	52.7	5.7	K
8.7	59.5	57.8	
8.8	14 0.8	53.2	Kb
9.5	41.4	0.2	B
9.5	48.4	1.9	
9.5	15 27.5	16.0	
9.2	16 0.4	58.8	
9.4	13.0	52.4	
9.4	17.6	27.8	Bb
9.5	23.1	51.2	αB
9.4	52.5	53.6	αB
9.5	53.9	56.5	
9.5	17 1.9	44.5	
9.0	24.5	55.9	K
8.2	29.2	57.7	K
9.0	40.1	14.9	
8.5	18 33.7	57.9	K
9.5	43.1	47.0	
9.0	19 27.1	27.5	
8.2	47.0	9.4	K
9.5	49.1	54.8	αB
9.3	58.8	5.1	
9.0	20 24.4	42.1	
8.2	21 5.2	48.0	K
9.5	20.4	36.5	
9.5	22.1	12.9	
9.5	25.4	23.0	
9.5	36.1	16.0	
8.5	51.8	55.9	K
8.4	22 7.2	49.8	K
9.5	13.4	11.1	
9.5	27.4	48.0	
9.0	33.1	42.3	
8.4	39.4	34.1	K
9.5	41.8	2.4	B
9.4	44.3	33.6	
9.4	45.1	42.0	
9.0	24 19.1	12.9	
8.7	37.3	0.4	K
8.0	51.5	9.2	Kb
9.0	25 17.1	40.7	
9.2	26 51.5	29.2	b
9.5	27 16.3	23.4	
	+	−	
10pr.	31.39	1.88	

1934ᵃ				
9.3	6	0.2	33.8	
1934ᵇ				
9.2	6	2.2	33.3	B

14

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	8m		+4°			8m		+4°			8m–9m		+4°			9m		+4°			9m–10m		+4°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	28	43.2	28.1	K	9.3	44	39.5	0.5		8.2	58	56.4	26.5	B	8.3	16	28.7	54.3		9.0	38	26.0	17.9	K
9.5	29	3.8	16.4		9.0	45	6.6	11.7		9.5	0	11.9	33.8	B	9.5		30.6	21.0		8.5		33.0	6.5	K
9.2	30	16.6	26.1	b	8.9		7.1	22.8		9.5		23.9	26.4		9.5	17	9.4	17.3		9.0		34.1	38.7	K
9.0		30.6	46.1		8.5		46.4	27.0	K	9.3		55.3	0.8		8.5		26.4	38.0	K	9.3		52.6	57.5	
9.5		57.1	46.8		9.3	46	9.6	39.8		9.4	1	0.3	7.9		8.0		48.1	54.0	K	8.3	39	35.0	5.2	Kb
9.5		59.4	20.7		8.7		11.4	28.3	K	8.5		18.6	31.6	L	9.5	18	3.1	17.5		9.3		37.3	53.4	a
9.5	31	4.3	20.0	B	9.4		19.0	14.7		9.5		55.9	5.2		8.5		26.1	54.3	K	9.0	40	16.6	52.9	K
9.5		14.9	12.4		9.5		22.8	27.7		9.5	2	10.8	6.6		9.5	19	6.0	12.2		9.1		22.2	45.2	K
9.5	32	0.0	27.6	B	9.3		24.9	11.0	B	9.4		25.7	57.3		8.7		10.6	57.3	K	9.5		36.4	31.1	
9.4		6.7	51.8	a	9.5		33.8	47.5		9.5		35.9	21.1		8.7		22.8	7.8		9.5		56.7	43.9	
8.7		11.1	3.0	K	9.5		40.4	4.4		9.5		50.8	8.7		9.5	20	12.0	55.0		9.0	42	8.7	46.2	K
9.0		14.6	43.3		9.3	47	11.1	57.2		9.2	3	6.2	37.1	b	9.5		29.7	14.0		9.5		50.8	25.1	
9.5		30.5	57.3	B	9.0		18.3	27.0		9.5		36.3	3.1		9.5	21	19.4	26.9		9.4		57.5	17.1	
9.0		35.7	53.7	Kb	8.5		21.6	41.6	K	9.5		49.0	56.5		9.5		31.4	26.5	b	9.5	43	5.7	23.1	
9.5		50.1	12.4		9.5		22.9	3.3	B	9.3		56.4	16.3		9.5	22	14.6	6.9		8.7		6.0	1.8	K
9.5		50.5	53.3		9.0	48	15.6	25.3		8.3	4	1.9	23.2	K	9.5		30.0	26.5		9.0		14.9	21.1	B
9.5	33	5.4	48.6		9.5		20.6	43.7		9.0		7.6	10.1	✠	9.5	23	2.7	20.0		9.5		43.1	6.5	
9.0		29.1	23.2		9.4		34.9	6.6	B	9.0		30.4	13.5		9.5		9.1	42.2		7.7		57.1	2.7	K
9.1		35.1	39.1	aB	8.4		43.2	7.8	K	7.2		38.4	28.5	Kb	8.3		41.4	16.5	K	9.2	45	4.9	13.4	
9.5		55.8	38.9	aB	9.3		55.6	37.0		9.0		41.7	44.1		9.5		56.0	4.0		9.3		12.8	44.9	
9.2	34	14.6	38.4	aB	7.0	49	0.6	47.8	K	9.1	5	8.0	3.6		9.4		56.4	19.6	a	9.2		17.5	34.4	aB
9.5		24.6	13.1		9.5		10.7	1.4		9.5		29.2	0.7		9.5	25	4.5	9.9		8.2	46	51.8	1.3	Kb
9.5		28.4	8.8		9.5		25.9	23.3	B	9.5		29.9	45.5		8.7		14.7	19.3		8.5	47	13.7	42.5	K
9.5	35	12.5	2.2		8.7		51.4	59.9	K	7.7		51.4	25.6	K	9.0		16.7	54.0		*9.2	48	37.1	9.2	
8.8		19.1	56.8	K	9.5	50	4.5	3.1		9.3	6	23.6	16.4		8.4		29.8	49.0	K	9.0		54.6	28.4	
8.5		58.6	25.2		9.0		13.9	31.7	B	9.5		36.0	14.8		9.4		54.4	31.8		8.2	49	4.4	43.7	K
9.5	36	1.9	33.2		9.5	51	9.6	38.5	B	9.5		36.3	18.9		8.6		56.1	26.9	Kb	9.5		13.6	44.4	
9.4		16.0	12.7		8.0		24.3	13.4	K	9.5		51.0	18.0		9.5	26	16.6	0.5		8.5		16.8	39.1	K
7.5		22.9	51.6	Kb	9.4		34.1	36.1		9.1	7	13.9	34.0		9.2		17.8	54.3		7.5		17.1	55.7	K
9.3		47.6	38.5		9.5		46.1	0.6		8.1		15.4	48.0	K	8.5	27	0.1	11.9	K	8.3		35.9	1.9	K
9.5	37	11.8	57.7		9.5		48.6	38.8		9.3		26.6	11.6		9.5		12.4	40.5		9.0	50	9.0	56.7	
9.5		21.9	11.6		9.0	52	0.6	11.7		9.5	8	2.8	5.3		8.5		29.5	41.1	K	9.5		29.3	27.6	
9.5		22.6	30.1		9.5		22.7	22.4		9.3		7.2	12.1		8.0		51.4	33.3	K	9.5	51	24.7	8.3	
8.7		35.1	44.4	S	9.5		25.8	51.3		9.5		23.9	11.8		9.4	28	13.1	52.9	aB	9.3		27.4	29.4	
9.5	38	28.6	15.5		9.1		29.2	12.9	B	8.8		32.9	26.3		9.5		13.1	57.4		9.0	52	2.5	33.1	
9.4		37.9	56.4	aB	9.5		32.5	58.5	a	9.1	9	8.9	55.2	ab	9.5		21.1	29.6		6.5		12.3	4.3	K
8.7		47.5	55.3	K	9.5		34.0	11.6	B	9.5		26.8	13.9		9.5		45.1	32.4	B	9.0	54	8.1	57.1	K
9.2		48.7	4.1	b	8.6		44.7	5.8	K	9.5		29.6	25.0		9.3	29	10.4	56.4		8.7		31.1	34.6	Kb
8.5		53.1	50.4	K	9.5		49.0	6.6		9.5	10	12.9	29.9		9.0		59.9	13.0		8.3		42.5	38.3	K
8.0	39	33.0	53.1	K	9.5		50.0	4.6		9.5		15.2	13.9		8.8	30	0.4	8.4	K	9.0		44.2	50.2	
9.0		34.2	20.1	K	9.5	53	28.6	38.5		9.5		55.7	38.1		9.5		16.3	33.5		8.5	55	8.8	22.7	K
9.5		38.2	6.3	a	9.0		33.9	29.0		9.5	11	6.9	27.2		9.3		48.7	15.0		9.4		49.9	4.3	
9.0	40	31.7	52.1	K	9.4		51.1	14.1		9.5		28.1	59.5		9.5	31	38.0	7.0		7.5	56	5.9	40.1	K
9.0		38.6	28.7		9.5	54	19.1	48.8		9.3		29.7	16.3	b	9.3		59.4	36.6		9.5	57	22.7	9.6	a
9.0		39.6	21.4		9.5		37.8	59.7		8.5	12	17.7	53.6	K	9.1	32	0.3	8.5	K	9.5		48.3	54.0	
9.0		40.1	6.3		9.5	55	30.1	41.2		9.4		40.0	28.3		9.3		1.1	20.4		9.3	58	17.5	20.4	
9.2		46.5	27.5	a	9.0		56.4	20.0		9.1		44.0	20.6	K	8.4		8.0	56.1	K	8.1		19.6	5.7	Kb
8.0	41	18.6	17.3	B	9.1	56	2.9	54.6	a	9.5		47.1	45.3		9.3	33	11.6	22.5		8.4		37.8	15.5	K
9.5		23.8	56.6		9.5		18.5	5.2		9.0	13	16.4	45.7		8.6		26.9	26.6	K	9.2		40.9	39.1	aB
8.0		39.6	1.6	Kb	9.0		19.1	25.5		9.5		39.1	30.7		9.5		37.0	8.0		9.3		46.9	32.1	
8.3		47.5	12.7		9.5		22.1	51.6		8.0		40.6	2.3	K	9.5	35	55.0	10.0	✠	8.1	59	0.1	11.5	K
9.5	42	17.8	55.9	B	9.5		49.9	12.1		8.5		55.0	33.7		9.5		56.2	58.6		8.9		38.9	23.2	Kb
9.0		42.6	37.8		9.5		49.9	49.6		9.5	14	8.1	0.5		9.3	36	11.2	9.0	B	9.0		57.6	57.4	
9.0		54.4	4.6	K	9.5		52.3	45.8		8.2		47.3	59.1	K	8.7		40.4	5.9	K	9.0	0	37.0	1.6	
9.5	43	1.8	58.0		7.7	57	5.7	6.0	Kb	9.2	15	3.3	56.2		9.2		56.0	19.0	B	9.0	1	8.6	0.6	Kb
9.0		4.4	33.9	S	9.5		38.1	14.3	B	9.5		12.8	29.0		7.5	37	5.2	0.6	K	9.5	3	14.5	28.6	
9.4		44.5	0.3		9.5	58	3.6	35.4		9.1		31.1	49.8	a	9.3		15.8	56.9	b	9.4	5	37.0	55.7	b
9.2		57.4	8.3		9.5		24.6	14.9	B	7.8		42.7	7.6	Kb	8.4		23.3	2.0	K	*9.3	6	31.6	16.5	
9.0	44	11.6	50.0	Kb	9.4		26.6	29.0	B	9.5		49.4	56.0		9.5		49.7	48.9	a	9.5		48.9	11.3	B
9.5		38.6	15.8		9.5		36.5	1.2		9.0		59.7	30.7		8.2	38	12.1	12.7	K	9.5	7	6.4	33.8	B
		+	−				+	−				+	−				+	−				+	−	
10pr.		31.54	2.12		10pr.		31.49	2.28		10pr.		31.44	2.43		10pr.		31.37	2.62		10pr.		31.28	2.81	

2263m				
9.5	48	5.0	32.9	
2297m				
9.4	5	41.3	6.3	B

2301—2360

	10ᵐ		+4°	
m	′	″	′	
9.5	7	8.5	29.9	B
9.5		11.2	11.0	B
9.2		17.0	39.1	b
9.5		23.0	35.8	
9.1	8	17.3	51.8	ab
8.3		40.4	16.1	K
9.5	10	10.5	29.7	
8.8		12.8	11.3	K
9.5	11	9.6	58.2	
9.4		54.6	40.0	
9.5		55.5	19.7	B
9.3	12	13.8	2.6	
8.5		59.5	20.7	K
9.3	13	3.3	50.3	
9.0		19.5	34.4	
8.8		24.8	41.7	K
9.4		34.1	59.1	
9.3		59.0	41.7	
9.5	14	46.0	1.0	
9.5		54.7	51.4	
9.2	15	27.4	7.0	b
8.5		38.9	23.3	K
9.5	16	37.5	34.7	
9.4	17	2.3	16.2	K
9.3		39.2	5.1	
9.3		41.8	13.1	
9.3	18	24.9	31.0	B
7.0		37.0	40.2	Kb
9.5	19	19.0	41.7	
9.0		49.2	47.2	K
8.2		51.2	35.5	L
9.0		52.5	26.8	K
7.5		59.8	17.6	K
9.3	20	10.2	37.9	B
9.5		17.3	47.8	
9.5		24.0	53.4	
7.8		34.9	3.7	K
9.3		38.9	15.5	
9.3		41.0	30.7	
9.3	21	25.4	11.8	
9.5		32.2	48.9	
9.0		34.0	27.0	B
9.0		58.7	38.3	K
8.4	22	46.6	16.9	K
9.0	23	11.0	38.6	
9.3	24	20.9	48.1	
9.5	25	28.7	56.6	
9.5		49.5	34.8	
9.5	26	8.2	48.9	
8.8		18.7	56.1	B
8.5		46.7	51.6	
9.0		52.3	12.8	
8.9		56.3	23.6	
9.5	27	25.2	34.1	
9.5		26.6	7.0	
9.3		52.1	21.4	
9.5	28	47.8	25.9	
9.0	29	9.2	41.7	
9.5		24.2	4.9	
9.5	30	8.1	24.5	
		+	−	
10pr.		31.16	3.03	

2361—2420

	10ᵐ		+4°	
m	′	″	′	
9.5	30	16.0	6.5	
9.2		43.2	9.4	b
9.0		55.9	52.5	
9.3	31	25.6	38.3	
9.3		27.7	31.4	K
9.0	32	47.2	53.5	
8.5		54.7	47.9	K
9.5		57.3	9.0	
9.0	33	28.3	19.6	L
9.3		30.2	21.5	B
8.8	34	17.6	6.8	
9.5		24.7	46.4	
9.5		50.9	49.8	
9.3		51.1	31.8	B
7.7	35	9.2	19.7	K
9.5	36	40.9	11.1	
8.7	37	3.8	48.2	K
7.5		32.1	4.2	K
8.1		43.2	30.3	K
* 9.2	38	56.4	4.2	
9.2	40	46.6	1.4	b
9.0	41	13.1	42.0	K
9.0		34.8	19.6	
9.3		55.0	57.3	
8.0		55.5	12.4	L
9.5	42	4.3	52.4	
9.4		54.9	25.1	B
7.3	43	27.6	21.7	K
9.0	44	4.1	8.8	
8.5		47.0	32.4	B
9.0	45	9.3	23.5	K
9.5		40.3	40.5	
9.3		55.4	37.2	
8.2	46	24.3	28.6	K
9.5	47	7.9	5.4	
9.3		15.1	54.7	
8.5	49	21.3	13.1	K
9.3	50	12.5	58.7	a
9.5		30.3	43.5	B
9.0	51	3.0	58.8	
9.5		17.7	50.3	
9.5		33.6	53.2	
9.5		52.7	44.8	
9.5	52	3.3	43.2	
9.4		34.7	59.3	
9.2		52.7	14.8	aB
4.5	53	5.3	24.2	K
8.0		8.3	31.0	K
8.9		24.3	13.8	
9.5	54	44.7	58.0	
9.5	55	34.5	7.4	
9.5		37.3	39.0	
9.5	56	6.9	9.5	
9.5		16.2	43.3	
7.5		30.3	25.5	K
8.5		34.3	34.3	K
9.5		52.9	47.3	
8.8	57	37.3	25.5	
9.5	58	2.4	41.4	B
9.5		30.0	16.6	
		+	−	
10pr.		31.01	3.21	

2421—2480

	10ᵐ—11ᵐ		+4°	
m	′	″	′	
9.5	58	33.5	51.3	
9.5	0	11.6	29.4	
7.7		46 8	18.7	L
9.0	1	19.5	57.0	
9.2		46.1	22.6	
8.2	2	26.3	30.3	B
9.0		38.0	8.6	
9.4		54.7	20.0	
9.0		59.0	31.4	
9.2		59.9	38.5	
9.3	3	22.8	47.8	
9.5		46.3	30.3	
9.5		53.0	1.6	
8.2		53.9	17.7	K
9.5	4	6.3	51.7	
9.5		17.3	8.4	
9.3		22.4	35.6	
9.5	5	52 5	0.3	
8.5	6	22.1	12.2	
9.5		34.7	2.0	
9.5	7	16.5	7.7	
9.3		48.9	33.9	
9.0	9	26.2	44.5	
9.5		33.7	35.6	
9.2	10	23.7	11.1	aB
9.5		50.7	52.8	
9.5	11	3.6	43.9	
9.5		46.7	29.7	
8.0	12	15.6	25.5	Kb
8.8	13	9.0	25.1	
neb		38.9	2.2	
8.5	14	1.6	44.3	K
9.5		*4.2*	*9.6*	
8.3	15	35.9	55.1	K
8.8	16	24.0	24.8	
9.5		32.0	13.0	
9.5	17	5.9	4.6	B
9.4		21.9	16.4	B
9.5		42.0	33.1	
9.5	18	6.0	16.9	
7.3		12.5	5.9	Kb
9.4		20.6	47.5	
7.0		22.9	39.2	K
* 9.0		32.4	45.4	L
* 9.0	19	2.4	16.4	
9.5		20.5	38.6	
9.5		33.4	18.8	
9.5		46.0	5.4	
9.3		48.8	12.7	
9.5	20	10.0	46.8	
9.5		36.4	6.4	
9.0		59.4	16.2	
9.5	21	10.5	35.1	
9.3		11.2	38.3	
9.1		33.4	0.1	R
9.5		36.5	43.9	
9.5		41.4	30.3	
9.5	22	3.1	51.6	
9.5		4.4	32.4	
8.0		9.4	34.5	K
		+	−	
10pr.		30.93	3.27	

2481—2540

	11ᵐ		+4°	
m	′	″	′	
9.3	22	14.9	23.4	
8.5		32.0	0.6	K
9.4	23	24.9	5.9	
9.5		38.5	30.3	
9.5	24	17.0	13.4	
9.4		17.2	21.0	
9.4		26.8	40.8	
9.5	25	1.0	55.9	
9.5		18.4	25.9	
9.5		38.0	19.7	
8.0		53.8	9.0	K
8.8		56.7	56.6	L
9.5	26	6.0	33.3	
9.5		19.9	32.4	
9.5		49.4	2.5	
9.0		54.7	55.4	K
9.5	27	0.3	22.9	B
9.0	28	21.1	44.6	K
9.5		21.4	21.7	
9.5		33.0	33.3	
7.5		47.6	6.1	K
9.5		55.9	22.7	
9.3	29	59.4	24.3	Kb
9.1	30	16.9	37.7	
8.7		38.4	25.8	K
* 9.3		44.3	31.4	
* 9.5	32	7.4	58.0	
9.5		33.6	47.5	
9.3		33.9	41.2	
8.5	33	2.9	26.9	Kb
9.5		8.0	47.9	
9.5		44.5	43.3	
9.5		48.6	47.3	
9.0	34	6.9	40.1	
9.5	35	8.5	34.0	
9.5		57.4	23.1	
9.1	36	3.9	1.3	b
9.5		14.8	15.4	
9.3		32.7	54.9	
9.5	37	22.4	22.4	
9.5		33.8	27.1	
9.2	38	7.2	58.0	b
9.5		9.1	42.1	
9.5		10.6	59.2	
9.5		46.7	27.3	
8.2	39	20.2	16.1	K
8.7	42	31.0	39.6	B
9.0		38.5	51.5	
9.3	43	47.9	12.7	
8.8	44	11.7	3.8	K
9.4		28.4	32.8	
9.5		35.0	10.3	
9.3		37.2	23.4	
9.5	45	2.4	5.7	
9.5		57.7	18.2	
9.1		57.9	27.2	Sb
9.5	46	6.9	19.6	
9.5		32.1	2.2	
9.5		41.0	3.4	
9.5		57.9	24.1	
		+	−	
10pr.		30.84	3.32	

2541—2600

	11ᵐ—12ᵐ		+4°	
m	′	″	′	
8.5	47	2.9	51.2	K
9.5		12.5	58.6	
9.2		15.9	34.2	
8.2		42.1	0.7	K
9.5		45.9	43.6	
8.7	48	3.9	20.0	L
9.0		33.9	2.5	K
9.5		40.1	1.5	
8.0	49	3.9	51.2	K
9.5	50	6.0	43.3	
9.5		6.7	1.8	
9.5		29.4	48.1	
7.5		47.9	18.2	K
9.2	51	13.4	46.9	b
9.5		17.6	4.6	
5.8	52	31.9	28.2	K
9.3		52.7	55.8	aB
8.4	53	6.9	53.6	K
9.5		25.5	32.6	
8.0		44.2	25.9	K
9.5	54	19.4	25.3	
8.8	55	28.1	58.1	K
9.2		55.9	1.6	K
9.5		56.9	24.5	
9.5	56	19.4	58.9	a
9.5		28.3	32.7	
9.0		32.4	8.8	K
9.0		39.4	9.5	K
7.5	57	18.4	23.4	L
8.5		38.4	10.9	K
9.0	58	3.5	45.6	
9.5		18.9	54.7	
9.5	59	16.3	8.8	
9.5		29.3	2.8	
9.5	0	26.9	14.7	
8.7		53.4	28.2	L
* 9.2	1	1.4	41.8	
9.0		15.6	53.6	
9.5		30.6	52.0	
9.2		31.4	33.8	
* 9.5	3	32.9	1.8	
9.5		57.0	37.1	
7.3	4	16.4	51.5	K
9.5		38.0	46.1	
8.0	5	5.9	12.6	K
9.5		16.9	25.5	
9.5		59.8	27.5	
8.8	6	14.4	46.3	K
9.5		51.4	34.8	
9.3	7	54.6	53.5	
9.5	8	8.6	5.7	B
9.5		11.9	35.6	
9.3		26.9	32.8	
8.5		43.4	21.4	Kb
9.4	9	13.2	16.8	
9.5		16.9	36.4	
9.0	11	19.4	40.1	K
9.3		39.9	49.8	b
9.5	12	1.9	29.0	R
9.5		7.9	31.0	
		+	−	
10pr.		30.73	3.34	

2308ᵃ
9.5 | 10 43.3 | 22.5

2379ᵃ
9.7 | 37 46.6 | 38.8 | B

2464ᵃ
9.5 | 18 56.0 | 58.6

2506ᵃ
var | 31 0 | 10.5

2576ᵃ
9.5 | 1 0.0 | 15.3

2580ᵃ
9.5 | 3 0.8 | 22.9

2601 — 2660					2661 — 2720					2721 — 2780					2781 — 2840					2841 — 2900				
	12ª		+4°			12ª—13ª		+4°			13ª		+4°			13ª—14ª		+4°			14ª		+4°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	12	18.9	40.3		8.5	43	27.8	17.6	K	6.7	11	30.7	26.9	Lb	9.5	39	10.8	38.2		6.7	7	35.0	0.4	Kb
9.5		43.0	2.6		9.0		35.5	23.1	Kb	9.0		42.7	14.4		9.5		58.3	0.2		9.2		39.8	27.5	K
9.5		46.2	3.7	R	9.4	46	43.5	27.0	B	7.7		46.8	28.7	L	8.6	40	36.3	34.2	K	9.5	10	19.5	0.3	
5.2		59.4	7.2	K	9.4		45.0	21.5	B	9.0		54.8	56.7		9.5	41	13.3	17.9		8.2		25.8	25.5	K
9.5	13	38.9	10.9		9.5	47	13.4	50.7		9.5	12	24.4	6.4		9.5		36.3	16.2		9.5		39.2	6.6	
8.5		49.9	30.7	K	9.1		27.6	25.6	aB	9.2		27.3	15.3		9.5		39.6	6.5		9.5		42.8	43.8	
9.0	14	17.4	21.0		9.5		30.2	48.5		9.5		36.7	43.6		9.4		57.0	45.3		7.5	11	12.3	21.4	K
9.5		36.9	54.3		9.5		30.7	39.1		7.5		53.1	2.3	K	9.5	42	39.3	55.1		8.7		36.3	34.2	K
8.7		54.6	6.3	K	3.0	48	18.3	11.1	K	8.5	13	29.2	53.2	K	9.5	43	15.4	20.6		8.7		45.8	51.2	L
9.5	15	14.9	14.7		9.5		29.5	18.2		9.5	14	4.4	13.7		8.5		34.6	16.4		8.5	12	27.0	40.8	K
9.5		36.4	15.8		9.5		52.1	26.1		9.2		47.2	55.1	b	9.3		44.6	22.2		9.5	13	26.5	0.3	
9.5	16	47.9	44.2		9.4		58.5	10.9		9.5	15	3.7	34.2		9.5	44	11.2	55.1		8.8		30.5	57.9	K
9.5	18	23.4	38.0	b	9.4	49	14.2	3.2		9.3		7.5	7.2		9.5		52.8	36.6		9.5	14	34.7	34.3	
7.7		31.5	59.6	K	9.5		29.6	46.7		9.5		9.7	17.9		8.7	45	4.3	37.3	K	9.5		46.8	56.1	
9.5		40.2	28.6		9.4		42.0	58.3		9.2		55.7	29.7		9.5		18.8	41.2		8.3	15	7.3	7.7	K
9.5		48.9	42.2		9.5		50.8	15.4		9.0	16	23.1	20.0		9.3		23.2	21.0	K	9.5		21.8	28.0	
9.5	19	2.0	10.6		9.5	51	8.4	54.2		9.5		36.4	8.0		9.5		38.4	45.7		8.5		22.0	19.0	B
8.7	20	52.4	3.6	K	9.5		43.6	15.8		9.5	17	6.4	56.8		8.5	46	11.5	21.0	K	9.5		33.8	56.8	
8.3		53.1	28.3	K	9.5		51.5	42.5		9.4		18.4	37.0		9.0		47.4	1.8		8.0		46.4	57.5	K
9.5	21	8.1	39.5		9.5	52	16.2	54.7		9.0		34.4	59.5	K	9.2	47	39.8	37.0	b	9.5	16	54.3	30.4	
9.5		18.3	49.8		9.5		57.2	14.4		9.5		46.7	6.0		9.5		45.6	35.3		9.2	17	44.0	3.9	b
7.5	23	11.0	18.2	Kb	9.5	53	0.4	2.7		9.5		48.7	43.2		9.5	48	18.3	11.2		8.3	18	4.1	36.0	K
9.5		16.3	57.3	K	8.0		8.5	23.1	K	9.5		55.4	30.7		9.5		36.3	42.5		9.5	19	34.8	57.2	
8.5		48.8	22.3	K	9.0		40.4	28.3		9.5	18	28.7	26.2		9.5	49	27.3	49.8		8.5		42.8	20.0	Kb
9.5	24	25.3	14.0		9.0		54.1	45.3	K	9.5		50.1	35.5		9.5	50	0.3	51.2		8.0	20	29.8	16.9	K
9.0		40.7	41.5	K	9.3	54	36.0	0.5	b	9.3		52.1	30.0		9.5		19.5	37.8	B	8.5		41.5	52.8	K
9.2	25	5.5	7.9	h	9.0		46.4	37.3		9.5		56.8	57.8		9.5		33.6	38.0		9.5	21	7.3	57.9	
9.5		11.3	58.2		9.5	57	28.7	44.0		9.3	20	24.1	37.7	B	9.0	51	32.2	35.6		9.5		8.8	35.7	
9.4	27	44.0	50.5	aB	9.5		36.9	29.7		9.0		25.0	24.9		9.5	52	36.2	2.7		8.8		18.3	26.0	K
8.5	28	14.7	12.3		7.8	58	24.4	52.6	B	9.5		31.3	4.7		9.5		37.8	37.3		9.5		26.2	58.2	
6.5	30	41.0	5.0	K	9.3		43.4	27.3	b	8.2	21	54.2	37.0	K	8.7		44.6	59.7	Lb	7.5		39.8	22.1	K
8.9		45.9	59.4		8.5		51.5	44.3	P	9.3	22	19.7	23.8		9.5		46.5	39.3		9.3		40.3	5.6	
9.5		54.3	18.9		7.8	0	7.8	43.7	K	9.5		45.4	54.4		9.5	53	46.8	37.0		9.3	22	38.8	12.3	
9.4		55.7	2.4	B	9.5		14.9	35.3		9.3	24	23.8	10.8	B	9.3	54	4.0	6.4		9.5	23	29.3	12.0	
9.5	31	0.1	20.1		8.3		38.9	1.7	K	8.5		35.7	57.2	K	8.2		8.4	49.4	K	8.5		56.7	8.4	K
9.5		47.8	45.3		9.1		54.4	33.5		9.4		38.7	27.2		7.5		17.6	57.4	K	9.5	24	4.3	45.0	
7.8	33	27.2	40.1	B	8.8		59.1	52.3	K	9.5		49.7	18.8		7.8	55	31.3	15.4	K	8.5		43.2	21.3	K
9.5	34	38.4	32.9		9.5	1	13.5	34.9		9.3		51.1	2.3		9.4		35.4	46.3	B	7.5		57.3	47.6	K
9.5		41.4	48.8		9.4		35.1	16.5		9.5		59.7	13.6		8.5		59.0	55.8	K	8.0	25	39.8	19.3	K
9.5	35	47.7	0.6		9.5		43.4	28.6		9.5	26	21.1	39.4		9.5	56	12.8	55.6	a	9.5	26	0.2	4.6	
9.0	36	22.4	41.2		9.2	3	0.4	56.3		9.5		24.1	8.9		9.5		51.5	19.2		8.8	27	7.3	49.4	K
8.3		34.8	43.8	K	9.5		1.7	37.4		8.5		30.2	39.1	K	9.0		52.6	52.5	K	9.0		44.5	55.4	K
8.2		52.8	8.8	L	7.7	5	19.5	49.2	K	9.0		39.2	39.1	K	9.1	57	7.8	44.8	Kb	8.8		56.7	43.9	K
8.3	37	11.4	20.0	K	9.5	6	0.7	49.5		5.0		47.6	24.2	K	9.5		19.7	9.4		8.9	28	18.0	1.3	
9.5		19.1	13.0		9.5		1.9	2.8		9.5	27	4.4	10.4		9.2		27.5	57.1		7.7		19.3	6.1	K
9.5		46.4	21.3	B	9.3		14.7	4.0	b	9.5	28	8.3	2.9		9.3		37.1	9.8		9.5		49.8	24.2	
8.4		58.1	19.3	K	9.5	7	50.9	15.2		9.3		59.5	6.1		9.5		55.6	0.3		9.1	30	8.2	1.7	Kb
8.8	38	6.1	47.1	K	9.3	8	7.7	14.7		8.8	29	32.2	46.1		9.5	58	32.8	53.2		9.5		18.9	59.2	
9.3		22.1	33.5		9.0		16.4	19.0		9.0	30	4.7	30.9		9.2		51.0	9.8		9.0		25.3	33.8	
9.5	39	16.8	38.4		9.5		22.7	47.1		9.5		40.1	0.9		9.5	0	25.8	43.5		9.4		31.5	25.5	
9.5		36.5	56.6		9.5		24.4	17.2		9.2	31	38.0	43.2	b	9.4	1	16.9	2.4		9.5		37.8	8.5	
9.5	40	19.4	57.5		8.0		43.5	43.5	K	9.1	33	4.4	14.4	b	9.5		41.8	42.5		9.0		43.3	12.4	
6.7		29.1	22.0	K	9.5		51.7	26.9		9.2		59.4	46.2	aB	8.5	2	39.8	42.4	K	9.5	32	4.8	14.3	
8.3		41.5	15.5	K	9.5	9	2.4	17.9		9.1	34	38.7	42.8	b	9.3	3	19.4	55.6		9.5		10.8	23.1	
9.5		42.8	42.5		9.5		30.7	48.4		5.7	35	47.3	16.6	L	9.5		50.3	48.2		9.5	33	28.8	4.7	
9.2		48.5	54.9	b	9.5		32.1	15.7		9.5	36	0.3	12.0		9.5		52.0	15.5		9.5		42.0	8.9	
9.5	41	43.7	49.0		8.8	10	46.5	6.7	K	9.5	37	12.5	4.0		8.8	5	4.8	31.8	Lb	9.5		44.8	17.9	
8.3	42	12.5	36.2	K	9.0		57.1	23.4		9.5		26.3	5.0		9.3		39.3	22.1		9.5		48.3	31.1	
9.5		24.5	7.1		8.4	11	0.1	30.0	L	8.0	38	13.3	13.3	K	8.5	6	25.4	59.1	Kb	8.0	34	1.6	4.2	K
9.5		40.1	48.9		9.5		15.8	0.1		9.5		51.3	24.1	B	8.8		53.3	38.8	K	9.5		30.2	27.1	a
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.59	3.31		10pr.		30.45	3.23		10pr.		30.36	3.13		10pr.		30.22	2.94		10pr.		30.11	2.72	

2651ª			
var	39	56	56.3

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	14ᵐ		+4°			14ᵐ—15ᵐ		+4°			15ᵐ		+4°			15ᵐ—16ᵐ		+4°			16ᵐ		+4°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	34	47.5	30.1	L	9.5	58	20.6	1.7		9.5	23	41.1	24.2		9.5	48	14.5	28.0		8.9	7	19.1	42.6	
8.7		56.3	33.9	L	9.0		39.1	24.0	K	9.4		50.1	52.6		8.3		36.8	45.7	K	9.2		44.9	12.5	*b*
9.5	35	11.0	49.2		8.3		39.6	34.0	K	8.8	24	47.1	33.9	L	9.5		46.5	54.8		9.5		54.3	45.8	
8.7		33.8	41.2	L	7.3		45.1	47.9	K	9.0	25	1.8	21.4	K	9.5	49	0.5	40.5		8.5	8	4.6	37.8	K
9.5	36	5.4	58.0		9.5	59	27.6	30.8		9.5		27.1	44.3		9.5		5.5	29.7		9.5		29.6	24.3	
9.5		16.6	40.1		9.3		44.6	23.6		9.4		33.7	23.7		8.8		37.1	45.4	L	9.2		48.3	23.6	
9.0		28.3	38.4		9.1	0	46.1	48.7	K	9.3		57.1	25.1		8.3		40.8	24.9		9.5	9	11.7	57.6	
9.5	37	32.8	40.8		9.5	1	2.6	37.5		9.2	26	27.1	43.1	*αB*	9.5	50	27.8	44.0		9.0		37.6	8.4	
7.8		39.7	5.7	K	8.0		4.1	29.2	K	9.2		30.7	30.1	*α*	9.5	51	3.8	28.7		9.5		39.1	20.5	
9.5		50.8	24.0		6.8	2	12.6	25.7	K	9.4		46.7	11.7	B	9.5		19.5	16.2		9.2		42.6	13.1	
9.5	38	15.3	43.6		7.8		32.1	15.0	K	9.5		50.8	24.6		9.3		32.1	9.6	*a*	9.3		53.2	48.8	
9.3		25.8	31.5		9.5		41.1	54.3		9.5		52.9	58.6		9.0	52	15.6	11.3		9.2	10	0.0	49.0	K
9.5		31.1	21.9		8.3	3	7.6	40.3	Kb	9.4		53.0	16.3		9.0		27.5	40.5		9.3		1.8	27.2	B
7.6		59.6	7.3	K	9.4		24.1	54.0		9.5	28	7.8	21.7		9.3		29.1	48.2		9.4		3.6	2.7	
9.0	39	54.1	15.0		9.5	4	6.1	33.4		9.3		12.2	5.8		9.5	53	33.8	12.7		9.5		33.4	15.6	
8.7	40	7.5	56.7	K	9.5		38.1	14.2		9.5	29	31.6	59.2		6.1		41.6	50.5	K	9.5		34.1	37.5	
9.5		20.6	43.4		8.3		58.1	52.6	K	9.4		43.5	17.2		9.3		50.5	35.0		9.5		44.5	59.5	
9.5		29.8	31.2		9.5	5	1.1	1.7		9.4		44.4	58.1	*b*	9.5	54	11.0	50.6		9.4	12	49.7	58.5	
9.5		30.1	17.0		9.5		28.6	46.2		9.5	30	15.8	54.4		8.5		40.5	13.7	K	9.5	13	23.1	8.9	
9.5	41	0.7	12.5		7.7		30.0	5.5	Kb	8.5		25.4	6.8	K	8.3	55	9.1	4.0	K	9.2		52.0	41.4	*b*
9.5		37.7	40.0		9.5	6	15.0	43.6		9.5	31	29.8	52.7		8.9		19.0	52.6	K	9.0	14	48.6	24.7	
9.2		39.2	30.2		9.5		19.6	27.8		9.5		41.5	40.1		9.5		27.5	43.0		9.5	15	7.5	59.9	
9.5	42	12.2	36.1		9.5		21.0	45.4		9.5	32	8.6	4.1		9.4		29.5	10.2		9.0		14.9	15.6	
7.8		28.6	29.6	L	9.0		56.1	27.7		9.5		27.2	14.1		8.6		41.5	2.6	K	9.0		15.1	7.6	K
8.0		36.1	31.6	K	9.4	7	55.4	19.7	B	9.5	33	7.4	53.7		8.5	56	40.2	8.0	K	8.7		18.6	23.9	
9.4	43	23.8	47.9	K	9.1	8	1.3	37.8	*αB*	8.4		22.5	38.1	K	9.5	57	0.8	52.7		9.5		32.0	33.0	
9.5		35.1	27.4		9.5		1.7	42.5	B	9.5	34	1.1	17.6		9.3		2.8	22.5		9.6		35.6	43.0	
9.3		37.5	57.2	K	9.5	9	13.5	54.8		9.5		46.2	31.2		9.5		47.5	13.4		8.8		51.0	56.0	K
9.3	44	15.7	54.4	Kb	9.5		36.6	58.3		9.5	35	3.8	8.3		9.3		55.5	40.2	*b*	8.6		57.9	25.7	K
9.2		58.6	31.6	K	9.0	10	13.0	41.9		9.5		40.8	10.4		9.5	58	38.8	30.5		8.7	16	0.5	38.8	
8.9	46	13.9	0.1		8.8		16.5	11.4	K	8.2		42.5	34.3	K	9.3		46.1	18.4	*b*	9.4		9.6	30.0	B
9.1	47	19.6	25.3	*b*	9.2		17.3	31.9		9.5	36	29.5	42.4		9.4	59	13.2	38.1		9.1		9.6	52.2	Kb
9.5		26.1	27.4		8.8		27.8	19.3	K	9.5	37	49.2	32.0		9.5		26.1	35.1		9.5		19.5	30.7	
9.5		26.8	37.1		9.1		35.6	19.7	*α*	9.5		55.0	37.1		9.5		50.3	20.5		9.0		28.9	23.9	K
9.5		59.1	40.7		9.5	11	12.5	9.2		9.0	38	8.3	59.9	K	9 5		52.7	28.4		9.2	17	15.6	49.3	
9.5	48	10.6	47.6		9.5		15.1	58.9		8.8		17.5	29.1	K	9.5	0	9.1	33.6		9.3		25.0	52.0	
8.3	49	9.1	48.6	K	9.1		29.5	16.5	*R*	8.8		46.0	35.1	K	9.5	1	49.3	2.7		9.2		42.1	22.9	
9.5		30.6	18.4		9.5	12	3.8	41.2		8.6	39	2.1	6.9	K	9.3		50.7	11.0		9.5	18	37.6	38.2	
8.7		38.1	33.7	K	9.5		30.5	32.2		9.4		42.0	52.0		9.3		54.1	17.9		9.5	19	27.6	4.2	B
8.2		41.6	44.4	Kb	9.5		31.5	43.6		9.5	40	19.8	6.4		9.4	2	0.9	8.6		9.5		31.5	55.8	
9.0	50	29.6	42.8	K	9.5	13	13.8	51.6		8.1		35.6	0.2	K	9.4		6.7	2.9		9.3		32.1	41.4	
9.5		34.6	9.0		9.4		33.6	12.5		8.1		37.1	45.0	K	9.5		10.9	13.1		9.3		58.0	53.3	
9.4	51	23.7	30.5		9.5		40.8	15.0		9.0	41	34.5	16.5		9.0		26.1	13.5		9.3	20	24.2	54.5	
9.5		27.3	56.3		9.5	14	0.2	56.0		9.5		51.8	9.6	*α*	9.5	3	9.1	47.2		9.2		27.6	22.1	*b*
9.5	52	22.6	28.4		9.5		34.8	23.4		8.9		55.5	29.8	K	9.2		18.9	16.6	*b*	9.5		40.6	24.2	
9.3	53	0.6	51.7		9.2		57.5	47.8	*b*	8.7	42	3.1	11.4	K	9.5		27.6	27.5		9.4		49.6	20.4	
8.9		39.5	54.6	Kb	9.5	15	9.1	11.3		9.5		12.5	13.4		9.5		40.6	36.4		9.5	21	34.7	32.6	
9.5		50.3	48.8		9.5		47.8	14.8		9.3		31.1	38.1		9.5		59.6	48.2		9.2		40.6	21.1	*R*
9.5		57.7	55.6		8.9		51.4	8.1	K	3.5	43	36.6	54.9	K	9.5	4	6.6	53.4		9.5		42 9	43.7	
9.5	54	16.1	58.2		9.5	16	23.5	4.0		9.0		50.8	16.2	K	9.5		14.6	37.8		9.4	22	3.5	26.3	B
9.5	55	12.1	28.1		9.4	18	32.7	51.9		9.5	44	29.7	1.9		9.5		56.6	17.2		8.0		24.1	54.1	Kb
9.5		34.1	57.0		9.5		40.7	13.2		9.1		31.8	25.3	*α*	9.0	5	17.6	38.2		9.5		57.6	17.0	
9.5	56	17.6	57.3		9.5		46.8	36.5		8.8		59.0	24.6	L	9.0		24.1	27.8		9.5	23	13.6	19.4	
9.3		21.7	54.0		9.5		56.5	48.2		8.6	46	8.5	41.6	K	9.5		39.0	1.2		9.0		15.7	12.4	
8.8		23.1	17.7		9.5	19	11.4	3.3		8.8		13.8	31.9	K	9.5		45.6	55.1		7.6		22.5	33.3	K
9.5		43.6	50.4		*9.5		48.5	34 7		8.7		43.5	51.6	K	8.8		58.2	18.4	K	9.0		28.6	18.7	
9.0		46.1	28.8	K	9.5	20	35.3	49.5		9.5	47	7.2	26.6		9.4	6	19.8	22.5		9.5		32.1	54.7	
9.5	57	37.1	21.9		9.5	21	20.5	49.9		9.4		13.7	4.0	*b*	9.0		23.1	42.7	K	9.5		40.0	59.3	
9 5		40.4	58.4		9.5	22	29.1	36.6		9.3		38.5	18.0		9.5		27.6	48.2		9.5	24	37.2	30.9	
9.5	58	17.6	5.4		8.9	23	39.0	15.5	K	9.5	48	11.1	34.5		8.0		54.5	24.3	K	9.5		43.5	57.3	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.02	2.51		10pr.		29.94	2.25		10pr.		29.87	1.97		10pr.		29.81	1.68		10pr.		29.78	1.46	

3015ᵐ				
9.5	19	32.0	37.8	*b*

3201—3260

m	16ᵐ	+4°	
9.2	24′ 49.1	36.0	
9.2	25 23.4	9.3	K
9.3	32.6	13.4	
9.5	37.3	26.3	
9.5	37.7	55.0	
9.3	26 12.6	23.1	
8.8	25.3	57.9	Kb
9.5	39.6	30.0	
9.2	27 0.8	26.5	aB
9.3	6.2	29.5	B
8.6	15.7	12.4	K
9.5	46.3	7.3	
9.5	28 1.0	46.2	
9.3	3.2	33.7	B
9.5	30.4	52.2	aB
9.5	37.7	40.8	
9.4	40.5	58.7	
9.1	29 1.5	10.8	
9.5	29.3	48.2	
9.4	36.4	8.3	
8.6	40.3	39.7	K
9.5	43.3	8.6	
9.2	48.0	54.5	
9.5	58.0	20.8	
9.5	30 32.5	11.1	B
9.5	38.3	51.5	
9.5	31 17.9	30.2	B
9.2	33.3	34.2	K
9.5	32 3.9	46.0	
9.5	31.4	58.1	
9.2	43.9	19.2	aB
8.5	53.2	16.4	K
9.5	33 5.7	38.9	B
7.5	22.7	28.4	K
6.1	27.6	30.4	Kb
9.5	46.0	58.5	
9.2	34 11.7	44.9	aB
9.0	39.5	40.1	K
9.5	35 15.3	15.5	
9.5	33.0	57.7	
9.4	36 11.9	9.7	
8.3	42.5	17.3	Kb
9.5	37 0.8	31.1	
8.9	29.3	46.1	K
8.9	44.4	27.7	K
9.5	38 4.7	31.9	
9.5	25.7	57.5	
9.5	31.0	30.8	
9.0	44.3	26.5	K
7.0	47.3	18.3	K
9.4	50.0	38.1	
9.5	39 4.4	27.7	
8.0	5.3	6.2	K
9.5	35.0	45.4	
9.4	46.1	17.2	B
9.5	55.2	41.5	
9.0	40 41.6	58.2	K
9.3	41 0.7	7.9	
9.0	46.1	37.4	K
9.5	57.0	13.8	
10pr.	+ *29.74*	− *1.23*	

3261—3320

m	16ᵐ	+4°	
9.5	42′ 0.4	3.7	
9.5	4.8	53.8	
9.3	16.7	42.0	B
9.0	53.0	59.5	B
8.5	53.6	58.7	K
9.5	43 14.6	14.9	
9.5	22.7	15.3	
8.8	34.8	40.9	K
9.4	50.0	38.7	B
9.0	57.1	51.6	K
9.4	59.1	27.8	B
9.2	44 0.7	55.3	
9.5	1.8	34.0	
9.5	12.3	4.6	B
9.5	30.8	18.1	
9.5	45 2.0	4.1	
9.5	7.0	8.7	
9.5	14.3	3.9	
8.6	18.1	32.3	K
9.5	46 31.9	31.3	
9.5	38.5	57.9	
9.5	47 15.1	11.2	
9.5	19.5	33.4	
9.5	48 18.8	5.9	
9.5	49 2.0	28.5	
9.5	20.0	0.7	
9.3	37.8	52.3	
9.0	49.1	9.5	
9.4	53.2	52.7	
9.2	58.8	40.9	b
9.5	50 14.5	38.5	
9.5	41.8	59.6	
9.5	58.6	5.7	
9.5	59.9	9.4	
9.5	51 8.8	15.3	
8.7	9.1	21.9	K
9.4	16.8	16.7	
9.5	29.7	42.0	
8.7	32.5	6.6	K
9.5	35.4	26.1	
8.5	38.3	10.0	K
9.5	41.9	15.3	
9.5	59.0	7.3	
9.4	52 45.8	42.5	
9.4	53 3.4	37.6	B
9.5	8.5	5.2	
8.8	15.1	22.9	
9.5	23.2	49.9	aB
8.8	41.1	15.3	K
8.7	54 23.5	20.9	K
9.0	34.3	13.3	K
9.0	37.4	20.5	
9.4	55 4.5	28.0	B
9.3	23.0	22.8	
9.5	25.6	27.3	B
9.5	41.0	32.5	
8.7	51.0	57.6	Kb
9.2	56 10.3	30.8	
9.1	34.4	5.5	K
9.5	54.8	27.8	
10pr.	+ *29.72*	− *1.00*	

3321—3380

m	16ᵐ—17ᵐ	+4°	
9.5	57′ 10.1	29.2	
9.0	29.7	54.3	
9.1	41.8	0.6	K
9.1	45.4	28.6	aB
9.0	52.5	41.3	
8.7	58 2.8	5.0	K
9.5	35.2	17.8	
9.5	43.5	38.5	
9.5	56.4	7.0	
9.5	59 1.8	33.3	
9.5	24.1	59.5	aB
9.1	24.8	30.5	
8.3	50.2	33.0	K
9.2	0 2.1	51.6	aB
7.8	18.8	9.8	K
7.0	1 11.8	36.4	Kb
9.3	35.6	0.4	
9.2	39.4	0.7	
9.0	42.1	37.8	
8.5	54.6	48.8	L
9.5	2 11.1	36.4	
8.0	22.0	7.8	K
8.6	34.8	4.3	K
9.3	40.1	35.0	
9.5	53.9	5.1	
9.5	3 34.0	44.7	
9.5	54.7	1.0	
9.3	4 5.8	19.2	
7.1	13.6	52.5	Kb
9.5	5 5.5	4.5	
9.4	9.9	16.8	
9.4	46.2	35.8	
9.5	6 18.9	57.9	
9.4	23.2	15.4	
9.5	34.6	22.5	B
9.5	43.8	36.2	
9.2	49.9	47.1	
9.0	7 3.0	15.4	K
9.5	6.8	6.7	
8.8	7.8	43.4	K
9.4	23.9	29.6	B
9.5	24.8	29.0	B
9.5	30.1	15.5	
9.4	39.7	30.6	B
9.5	46.0	5.9	
9.2	8 0.8	36.5	
9.5	4.0	4.5	
9.3	15.5	31.7	
8.5	29.5	15.0	
9.5	36.6	52.1	
8.8	39.2	57.9	K
9.3	44.5	43.1	
9.5	9 2.2	4.9	B
9.1	8.6	59.2	K
9.5	9.3	5.9	
9.5	17.5	43.8	
8.8	20.3	57.9	K
9.5	10 8.4	8.5	
9.5	12.8	47.6	aB
9.3	16.5	50.2	aB
10pr.	+ *29.69*	− *0.80*	

3381—3440

m	17ᵐ	+4°	
9.5	10′ 25.2	34.8	
9.0	29.0	10.4	K
9.0	29.8	21.0	K
9.3	35.8	57.3	
9.5	42.7	2.2	
8.8	59.6	12.6	K
8.8	11 1.2	4.4	K
8.1	14.9	59.9	K
9.1	21.3	15.8	K
9.5	25.9	52.5	
9.5	36.6	1.4	
9.5	52.5	21.0	
9.3	56.4	40.1	B
9.3	12 23.3	15.4	K
9.3	30.5	41.7	
8.5	13 5.1	24.9	Kb
9.5	35.4	5.5	
7.5	53.9	46.9	B
9.5	14 8.8	9.1	
9.0	12.1	37.2	
9.0	14.5	19.6	
9.1	14.9	58.8	a
8.8	50.5	38.2	
9.3	57.3	7.8	
9.1	15 13.6	54.3	a
8.7	15.5	29.3	
9.5	44.5	39.3	
9.3	49.8	40.0	
8.9	59.2	2.1	K
9.3	16 12.5	48.8	
9.5	12.6	56.2	
9.2	20.0	25.8	
8.6	39.6	59.5	K
9.5	40.2	33.8	
9.0	17 10.3	34.4	K
9.3	42.1	48.6	
9.5	18 24.2	58.7	
9.5	35.5	15.0	
8.5	37.8	47.0	K
9.1	53.5	11.9	
8.6	19 16.8	24.8	
4.0	20.0	15.8	P
9.5	20 19.1	49.0	
9.0	22.5	35.8	K
8.5	31.3	27.5	K
9.5	21 8.3	3.6	
9.5	15.9	44.9	
9.5	32.5	13.7	
9.5	33.6	30.5	
9.1	37.2	16.5	b
9.5	22 3.2	23.7	
9.5	12.2	59.9	
9.5	25.5	10.7	
9.5	36.0	30.4	B
9.5	53.6	10.1	
9.5	23 0.2	41.4	
9.1	52.2	18.9	Kb
9.3	24 13.5	42.8	
9.5	25 6.8	51.8	
9.3	31.0	56.5	
10pr.	+ *29.68*	− *0.64*	

3441—3500

m	17ᵐ	+4°	
9.5	25′ 33.1	8.8	
9.5	51.9	17.2	
9.5	26 1.7	9.0	
9.5	22.2	21.0	
9.1	31.8	53.7	a
9.5	50.9	47.4	
9.0	27 20.2	24.8	
8.0	28.6	12.9	K
9.1	39.0	30.0	
9.0	28 7.7	1.9	
8.3	8.3	3.0	L
8.7	29.3	14.7	K
9.5	29.8	27.5	
9.0	30.6	40.2	K
9.2	33.6	11.0	
8.6	59.4	57.0	Lb
9.5	29 17.5	23.5	
9.4	30 6	12.3	
8.8	38.6	29.9	K
9.5	30 10.9	37.9	
8.6	37.5	37.9	K
9.1	37.9	15.8	
9.4	48.4	8.0	
8.1	31 0.8	34.5	L
9.5	3.5	40.0	
8.7	14.3	17.2	K
8.6	30.3	26.1	K
9.2	51.2	22.3	
8.1	56.5	32.9	K
9.2	32 0.1	29.4	a
9.2	8.6	18.2	aB
9.3	25.7	49.3	
9.5	33.2	17.5	B
9.3	48.5	22.8	B
9.3	33 32.6	45.2	
7.8	33.8	12.6	K
9.0	44.4	55.2	K
9.5	54.8	2.3	
9.5	55.0	46.1	
9.4	34 24.1	52.2	
8.2	27.5	16.4	K
7.5	43.6	25.6	K
8.8	59.3	29.2	K
9.3	35 21.7	19.0	B
8.9	38.2	53.2	
9.3	36 3.6	15.0	
9.5	8.0	1.4	
9.4	13.4	57.8	
3.0	19.5	37.7	K
9.5	37.9	24.0	
9.4	43.0	55.8	
9.3	45.7	53.3	B
8.1	45.9	24.6	K
9.5	37 6.3	4.3	
9.2	15.5	33.8	
9.1	33.4	15.0	K
9.4	38 15.0	51.7	
8.8	18.5	29.9	
9.5	19.3	54.5	
9.5	47.1	51.6	
10pr.	+ *29.67*	− *0.41*	

3214ᵉ

9.7	28	4.0	35.8	B

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	17ʰ		+4°			17ʰ—18ʰ		+4°			18ʰ		+4°			18ʰ		+4°			18ʰ		+4°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.9	38	50.8	16.3		9.4	50	42.9	16.9		9.5	2	18.6	39.3		9.5	9	40.9	27.6		9.5	19	11.4	55.8	
8.9		51.7	44.3		9.5	51	14.9	29.4		9.0		26.4	10.5		8.7		52.6	52.6		9.4		17.1	31.9	
9.1	39	13.1	1.7	*b*	9.5		34.8	9.6		9.3		28.4	58.3		9.4		59.9	24.0		9.1		20.3	8.4	
9.5		33.0	16.2		8.8		57.3	57.9	Kb	8.1		33.0	34.8	*B*	9.5	10	16.5	57.9		9.3		30.2	9.5	
9.5		35.4	47.5		9.5	52	5.6	51.5		9.5		39.4	19.8		9.4		22.7	55.5		9.5		42.6	14.6	
8.1		59.7	29.2	K	9.5		15.2	37.4		9.5		40.6	14.2		9.3		27.0	52.8		9.1		44.4	14.4	
9.2	40	10.5	36.9		9.4		17.5	49.2		8.4		53.1	47.2		9.4		27.2	47.1	*aB*	9.5		51.1	4.4	
9.0		23.9	53.5		9.4		26.1	49.1	*aB*	9.5	3	3.8	9.1		9.3		29.9	53.9		9.3		52.3	30.4	
8.7		37.2	59.9		9.4		28.0	20.1		9.3		10.8	2.4		9.4		30.0	48.1		9.5		54.0	7.2	
9.5		57 9	23.3		5.3	53	5.9	22.1	K	9.4		15.0	2.2		9.5		42.3	57.3		9.5	20	7.2	54.4	
9.3	41	0.9	16.0		9.3		11.8	31.8		9.0		20.0	54.8	*B*	9.3		55.9	49.6		9.4		22.8	21.2	
9.5		16.4	25.0		9.0	54	32.9	41.2		9.5		24.8	58.2		9.0		57.5	23.9		9.5		46.4	27.3	
9.5		17.5	21.9		8.5	55	1.9	22.8	P	7.7		39.0	24.4	*B*	9.4	11	7.6	0.2		9.4		52.6	46.1	
9.5		45.8	34.0		9.2		22.6	26.6	*a*	9.5		46.3	25.8	B	9.2		14.1	26.0		9.3	21	10.3	1.5	
9.5		53.7	15.2		9.3		28.8	16.6	.	9.3		46.5	8.8		9.5		23.2	48.0		9.0		14.0	42.5	
9.4	42	0.0	35.5		9.5		28.9	29.6	B	9.5		56.6	7.2	B	9.1		23.6	47.0	*aB*	9.4		16.2	55.1	
7.7		25.0	25.2	K	9.5		36.3	29.7	B	9.5		59.9	31.0		8.5		23.9	6.5		9.5		20.5	16.7	
9.4		39.3	6.0		9.5		42.4	19.0		9.5	4	19.1	43.1		9.5		25.5	54.5		7.5		23.8	46.0	*B*
9.5		45.6	48.7	*aB*	9.5		49.1	29.4	B	9.5		20.2	6.4		9.4	12	5.1	21.6		8.5		24.3	44.9	
9.0	43	7.0	15.8		9.3	56	9.3	12.8		9.5	5	2.0	22.8		9.5		30.0	54.7		8.4		51.2	2.8	Kb
9.5		7.3	32.2		9.0		13.4	47.5		9.5		5.9	16.1		8.4		33.9	59.6	K	9.4	22	2.1	48.5	
9.0		9.7	7.3	K	9.4		17.8	3.0		9.4		13.9	46.5	*B*	7.5		43.3	26.0	B	9.5		8.8	54.5	
9.5		10.5	42.4	~~B~~	9.0		50.3	38.2		9.5		14.1	58.9		8.3		44.4	17.8	B	9.3		16.9	58.0	
9.5		13.1	47.4	B	9.0		57.0	20.1	B	8.8		15.5	13.3	B	9.5		58.1	27.3		9.4		18.6	10.3	
9.4		13.4	57.9		9.4	57	0.0	18.0		8.9		17.6	12.1	K	9.5	13	15.9	40.9		9.5		22.4	18.6	
9.3		16.2	45.9	*a*	9.5		10.3	5.2		9.4		20.5	58.7	*aB*	9.5		18.7	50.3		9.2		28.3	47.3	
8.7		22.0	6.5	K	9.5		37.9	6.5		9.5		23.0	55.4		9.5		48.3	4.1		9.5		40.5	32.2	
9.5		26.5	48.3		9.0	58	20.9	31.1	K	9.1		28.1	10.0	B	9.5		55.0	54.1		9.5		40.6	29.9	
9.5		32.7	47.6	*a*~~B~~	7.2		28.8	39.5	K	8.6		36.9	6.8	K	9.5	14	18.8	15.9		9.5		43.2	44.2	
9.0		32.7	27.9	K	9.4		33.3	40.0	*a*	9.5		46.6	59.1	*aB*	9.5		20.2	23.2		9.2	23	11.0	40.5	
9.5		36.8	6.4		9.5		35.7	10.4		9.2		51.6	14.8		9.4		23.2	7.6	B	9.3		11.2	43.5	
9.5		43.5	1.4		9.3		45.1	49.9		8.7		55.5	3.1	K	9.4		23.5	4.3		9.5		18.1	4.9	
9.5		43.9	16.8		8.5		50.9	34.0	K	9.5	6	7.0	58.0		9.5		30.8	4.1		8.7		21.8	10.5	K
9.3	44	3.2	27.3		8.5		51.8	33.0	K	9.5		23.5	57.7		9.5		32.4	5.1		7.2		30.5	24.8	K
9.1		17.3	28.0		9.0		52.9	52.0		8.9		34.8	36.8	Kb	9.5		35.6	11.8		8.9		31.3	26.8	K
9.5		23.4	55.0		9.2	59	11.0	6.4		9.5		37.9	57.9		9.4		55.0	40.4		9.4		45.4	31.5	B
9.3		28.2	52.4	K	8.8		11.0	14.6		9.5		50.7	28.8		8.7		57.4	24.3		9.5		51.5	53.2	
9.5		36.0	6.3		9.4		11.1	40.6	B	8.0		56.8	11.2	K	8.9	15	5.4	24.4		7.7		54.0	32.1	K
9.0		40.4	54.9	K	9.1		11.8	27.8		9.5	7	16.5	34.1		9.5		29.0	16.3	B	9.3	24	11.8	17.3	
9.0		46.9	30.7	K	9.2		21.5	49.1		9.4		17.4	40.0	B	9.5		30.0	52.6		9.4		22.5	56.4	
7.0		50.2	31.5	K	9.5		28.9	30.5		9.5		23.9	48.7		9.4		38.8	34.9	B	9.2		39.4	12.2	
8.6	45	33.4	34.0	Kb	9.0		37.8	0.2	Kb	9.4		46.4	42.4		9.5		40.6	40.9	B	9.3	25	3.9	42.1	
8.0	46	26.7	53.7	B	9.5		38.5	42.1	B	9.5		47.9	49.0		9.4		55.0	25.1	*aB*	9.4		11.9	41.6	
9.5		32.2	22.0		9.5		48.9	57.6		9.4		54.6	9.6		9.2		59.0	24.4	K	9.4		17.4	51.7	
8.7		41.1	11.8		9.5		55.4	4.8		9.5		57.2	16.7		9.5	16	5.9	14.7		7.5		27.5	11.4	K
9.5		53.0	51.3		9.5	0	5.3	43.0		9.5	8	6.0	37.8		9.5		11.5	7.0		9.5		37.3	34.6	
9.5	47	36.9	55.8		9.5		15.7	13.1		9.5		8.0	35.0		8.9		15.9	2.3		8.2		41.6	6.6	K
9.5		47.6	15.9		9.5		27.3	50.5		9.5		11.1	27.7		9.5		32.1	5.6	B	9.5		49.8	17.2	
9.3		55.4	38.5	K	9.5		29.1	3.4		9.4		17.2	19.9		9.0		46.3	25.0		9.5	26	10.0	21.2	
9.4	48	37.0	40.8	B	9.4		41.8	40.3		9.5		23.4	36.3		9.5		49.5	44.5		9.4		24.8	27.3	
9.1		50.8	34.0	K	9.5		52.8	48.6	*a*	9.5		33.3	0.1		9.5		58.6	30.5		8.0		30.8	29.2	*B*
8.7	49	3.6	54.8		9.5		57.7	1.8		9.3		35.0	23.1		9.5	17	21.8	56.8		9.1		46.1	58.6	*a*
8.1		4.1	51.5	K	9.0	1	3.0	47.9		9.5		35.0	6.2		9.4		29.3	52.9		9.4		50.1	3.5	
9.0		16.9	16.2	K	9.1		26.0	3.0	*b*	9.4		40.4	27.8		9.5		46.9	50.2		9.3	27	6.0	39.0	
9.5		18.0	21.5	?	9.5		48.9	55.6		9.0		50.1	58.0		8.5	18	4.8	35.5	K	9.4		26.7	31.9	
8.0		35.9	24.2	K	9.5		48.9	52.3		8.3	9	2.5	30.8		9.2		11.7	7.8	*b*	8.2		48.3	7.6	K
8.5		37.9	51.3	L	9.3		53.2	45.1		9.1		6.5	30.8	*a*	8.1		29.3	32.4	K	8.5	28	9.5	49.7	K
8.7	50	11.0	54.5	K	9.0		53.7	14.3		9.5		11.4	28.3		8.8		47.5	33.5	K	9.3		13.8	31.6	
9.5		17.8	35.7		9.4		56.0	59.2		9.3		25.6	19.1		9.5	19	0.9	30.2		9.0		20.0	53.6	K
8.7		33.3	28.0	K	9.5		59.5	13.5		9.5		37.6	5.1		9.3		4.6	23.9		9.2		22.9	20.4	K
10pr.		+ 29.67	− 0.23		10pr.		+ 29.67	− 0.01		10pr.		+ 29.67	+ 0.09		10pr.		+ 29.67	+ 0.20		10pr.		+ 29.67	+ 0.33	

3801 — 3860

m	18ᵐ	+4°	
7.0	28 27.7	49.5	K
9.1	28.1	50.0	α
8.9	53.9	59.7	Kb
9.3	29 4.4	16.8	
9.4	18.2	17.7	
7.0	19.6	50.1	K
9.3	21.6	9.7	
9.2	38.0	55.0	
9.5	52.2	42.1	
9.0	30 1.1	7.5	
9.5	5.7	28.1	
9.2	6.1	8.8	α
9.3	22.0	55.3	
9.5	29.7	51.0	
9.5	46.7	25.0	
9.0	58.8	15.4	
9.5	31 0.1	2.5	B
8.6	8.7	50.7	Kb
9.5	10.5	0.3	
9.2	17.8	37.7	
9.5	19.9	56.2	
9.3	27.5	54.2	K
7.1	31.0	43.9	K
9.5	32.4	37.4	
9.5	32 1.7	46.1	
9.4	2.4	27.2	
9.4	15.6	42.5	B
9.5	16.2	36.6	
9.4	17.2	27.7	
9.5	23.3	34.6	
9.3	37.7	20.8	
9.5	49.3	27.8	
9.5	33 24.1	51.8	
9.5	31.0	37.7	
9.5	32.6	42.1	
9.4	34 9.0	49.0	
9.3	9.1	52.8	
7.3	9.3	25.3	L
9.5	21.6	37.2	
9.5	33.7	39.8	
9.5	37.0	37.2	
9.4	54.3	46.9	
9.3	35 4.2	39.5	
9.1	5.4	33.4	K
8.7	29.1	39.7	K
9.3	38.2	28.1	
9.5	53.8	40.9	
9.4	36 5.0	7.1	
9.5	6.2	34.4	
9.2	12.4	53.3	
9.5	22.3	54.4	
8.8	24.4	35.7	Kb
9.5	26.8	11.6	
9.1	35.4	38.6	αB
9.5	40.2	45.2	
9.4	42.5	52.3	
8.8	46.4	31.2	
8.5	49.8	48.6	K
8.5	58.3	52.4	K
8.2	37 2.6	47.5	K
	+	+	
10pr.	29.68	0.47	

3861 — 3920

m	18ᵐ	+4°	
9.4	37 3.3	42.0	a
9.5	10.9	18.8	
9.5	16.5	11.3	
9.3	20.2	39.3	a
9.0	22.4	53.0	K
9.3	52.3	8.7	
9.5	38 0.5	55.5	
9.5	29.5	27.2	B
9.5	32.0	52.5	
8.9	32.3	25.7	K
9.5	47.1	9.1	
9.0	50.9	32.9	
9.5	52.4	31.7	
9.5	57.1	2.4	
9.3	39 0.9	53.0	
9.5	19.5	9.8	
9.5	21.1	10.6	
8.5	25.7	52.5	K
9.1	38.1	59.2	a
9.5	39.0	31.3	
8.8	40 11.5	28.3	K
9.5	39.7	38.7	
9.5	43.4	41.9	
6.5	51.8	5.2	Kb
9.5	41 9.4	33.7	
9.3	53.5	31.5	
9.5	54.4	51.5	
9.5	42 20.9	21.1	
9.2	21.4	19.5	
9.2	43.8	45.2	b
9.4	54.1	51.6	αB
9.5	43 22.6	49.4	
9.5	52.0	45.9	
9.5	44 12.7	8.6	
8.5	32.2	26.4	
9.5	32.6	59.5	
8.9	35.6	52.6	K
9.2	39.0	31.8	a
9.5	47.8	48.2	
8.3	59.4	21.2	
9.4	45 54.0	16.4	
9.0	46 0.2	3.0	K
9.5	26.8	23.7	
9.5	30.1	20.2	
9.5	45.9	33.0	
9.5	47 1.2	38.8	
9.5	30.9	3.4	
9.5	48 16.8	6.9	B
7.5	22.9	15.3	L
9.5	26.9	59.7	αB
8.2	29.5	5.3	L
9.1	37.6	48.3	a
9.4	43.4	42.6	
9.5	54.9	38.8	
9.4	59.5	45.2	
4.0	49 0.8	0.8	K
4.3	2.0	0.7	K
8.8	18.7	12.1	
7.3	26.0	4.5	K
9.5	31.5	11.7	
	+	−	
10pr.	29.68	0.62	

3921 — 3980

m	18ᵐ—19ᵐ	+4°	
9.2	49 33.6	51.7	
9.5	41.2	5.9	
8.3	42.7	28.8	
9.5	55.8	47.9	
9.0	59.9	6.6	K
9.5	50 1.0	52.3	
9.5	1.9	7.9	
9.5	3.8	10.8	a
9.5	20.8	39.0	
9.5	24.5	57.4	
9.4	34.8	48.2	
9.4	37.1	56.3	
9.2	51 15.3	57 8	b
9.5	28.6	11.6	
9.5	29.9	13.6	
9.3	46.7	30.7	
9.3	52 5.1	54.1	
9.5	47.3	49.8	
8.3	48.5	25.1	
9.5	53 3.0	6.0	B
9.5	12.0	26.9	
9.1	16.4	14.1	
9.1	35.1	24.1	αB
9.5	44.5	49.8	
8.8	46.6	59.0	
9.5	54 3.0	11.2	B
9.2	5.0	58.0	
8.6	16.5	3 6	K
9.3	17.4	40.4	
9.3	24.6	14.6	
9.3	35.8	1.2	
9.5	37.7	42.3	
8.2	41.2	58.1	K
9.0	41.8	37.8	
9.3	55 9.2	35.0	
9.5	10.0	33.9	
9.5	52.4	39.1	
9.5	56 10.8	19.3	
8.2	35.8	51.4	K
9.4	43.1	6.6	
9.3	46.3	3.2	
9.5	46.3	34.4	
9.2	57 7.6	46.1	
9.3	11.0	54.5	
9.2	12.1	40.2	
9.5	39.8	28.1	
8.6	41.7	20.2	
9.5	58 8.3	4.5	
7.2	31.0	3.7	B
9.5	31.8	59.5	αB
9.5	43.2	0.2	
9.5	45.6	23.8	B
9.3	46.1	55.0	
9.2	59 26.8	31.0	
9.1	30.0	43.9	K
8.9	36.1	50.8	K
9.1	48.2	32.7	
9.5	53.7	4.3	
7.4	0 12.1	59.9	Kb
9.5	28.9	40.0	
	+	+	
10pr.	29.69	0.78	

3981 — 4040

m	19ᵐ	+4°	
9.5	0 39.2	0.2	
9.0	41.5	21.2	K
9.5	52.8	36.1	
9.5	55.1	2.5	
9.5	56.0	23.3	
9.3	1 2.7	54.2	αB
8.7	26.7	53.7	B
9.5	56.7	6.3	
9.0	2 6.6	21.9	
9.4	19.3	40.1	
9.5	22.0	42.3	
9.2	24.1	54.7	K
9.5	24.6	52.6	
9.5	29.4	35.5	
9.3	47.8	58.3	
9.5	51.2	48.4	
9.5	58.7	21.7	
9.5	3 1.0	10.5	
9.5	1.2	43.2	
9.4	36.8	2.6	a
9.5	40.4	20.4	
9.1	46.5	59.2	a
9.5	48.3	21.7	
7.5	56.2	56.7	K
9.5	4 8.0	1.5	
8.8	9.0	31.6	
9.5	28.3	35.1	
8.1	43.2	34.2	B
7.8	47.2	6.7	K
9.0	5 0.0	8.8	K
9.5	4.8	21.7	
9.5	5.8	43.8	
9.5	12.1	35.8	
9.0	15.4	8.1	K
9.5	29.8	7.1	
8.8	32.4	49.4	K
8.7	35.2	31.0	K
9.5	35.5	46.0	
8.0	56.7	41.9	K
9.5	6 8.7	27.0	
9.1	11.9	35.3	
7.7	21.1	1.5	L
9.4	31.5	47.0	
9.5	32.7	8.9	B
8.7	35.5	44.7	Kb
9.2	37.0	34.3	
9.1	49.7	40.5	
9.4	52.3	5.4	
9.2	57.0	48.6	K
9.5	7 16.7	42.0	
9.0	26.4	0.7	K
9.5	28.7	53.1	
9.2	30.6	49.3	K
8.3	34.9	22.7	K
9.5	46.4	53.2	a
9.5	49.1	37.5	
9.3	8 29.3	56.9	
9.5	32.6	22.8	
9.5	37.4	44.1	
9.5	41.1	13.4	
	+	+	
10pr.	29.71	0.94	

4041 — 4100

m	19ᵐ	+4°	
9.5	8 45.3	9.3	
9.5	49.8	58.5	αB
9.3	52.9	57.2	
9.5	54.1	22.4	
5.7	9 20.9	35.3	K
9.5	44.9	25.2	
9.5	49.5	43.8	
9.2	51.8	57.9	
9.5	52.6	27.2	
9.5	10 16.8	10.3	
9.5	24.0	1.2	
8.6	31.3	42.6	K
9.3	32.9	51.7	
9.5	53.0	0.9	
9.4	11 8.2	59.6	
8.4	11.4	37.4	K
7.0	12.8	52.5	K
9.1	18.0	17.6	
9.5	27.4	37.5	B
9.3	31.0	16.6	
9.2	33.3	8.6	
9.1	38.9	35.3	
9.5	40.3	52.1	
9.4	42.5	26.8	
8.9	46.6	1.0	
9.3	51.4	39.8	
9.2	12 10.5	6.0	
9.5	12.3	15.9	
8.1	54.4	12.4	
9.5	58.2	45.0	
6.8	13 8.6	31.4	Lb
9.5	47.9	21.6	
7.5	53.5	50.3	K
8.2	14 11.6	51.5	K
9.5	13.0	24.7	
9.5	45.0	51.5	
9.4	15 0.4	28.4	
9.5	8.5	42.8	
9.5	9.6	21.4	
9.4	18.5	19.5	
9.5	33.2	51.9	
9.3	36.5	18.7	
9.0	52.4	20.7	
9.2	56.9	49.8	b
8.7	16 5.6	10.4	K
9.5	20.3	8.7	
9.5	31.8	44.5	
9.2	58.9	8.1	
9.4	17 12.2	41.1	
9.5	26.7	14.8	
9.5	27.0	34.8	
9.5	44.0	47.0	
9.0	53.4	18.3	K
9.2	56.8	35.5	
9.5	18 6.3	23.4	
8.5	19.4	33.0	K
9.2	26.1	53.9	αB
8.9	48.8	54.3	K
9.5	51.3	57.7	
9.3	55.4	1.1	
	+	+	
10pr.	29.72	1.05	

4101—4160

m	19h	+4°	
	′ ″	′	
9.5	18 55.6	1.6	
9.5	19 7.7	16.6	
9.4	8.1	6.0	
9.2	10.2	35.6	
9.0	12.5	54.9	K
9.2	22.1	8.5	
8.3	40.2	1.4	K
9.3	45.0	51.9	
9.5	46.3	27.3	
9.5	51.9	1.0	
9.1	20 12.0	38.0	
9.5	13.2	58.8	
9.4	23.4	5.8	
6.7	30.1	25.5	K
9.5	58.8	4.7	
9.5	21 10.9	50.1	
9.5	13.9	45.0	
9.5	48.3	30.4	
9.5	52.2	53.5	
9.5	22 20.0	0.3	
9.5	41.0	39.9	B
9.4	42.5	33.9	B
9.5	43.0	40.3	
9.5	45.2	22.7	
9.5	49.8	58.4	
9.5	58.1	23.1	
9.5	23 3.0	40.6	
9.3	6.6	0.9	
8.8	15.8	20.7	
9.5	16.4	42.8	
9.5	25.2	37.2	
8.2	49.1	10.8	B
9.5	56.4	25.3	
9.5	24 7.2	48.5	
9.5	8.9	52.5	
9.5	9.8	55.9	
9.4	22.3	27.3	B
7.8	28.7	43.1	K
8.8	38.1	2.6	K
9.3	43.5	25.0	B
9.5	51.6	1.0	
9.2	59.6	16.5	
9.5	25 2.4	42.4	
9.5	7.6	31.9	
8.5	10.1	11.4	Kb
9.5	11.8	23.0	
9.5	27.3	44.6	
9.4	27.6	15.1	
8.8	36.0	3.2	K
9.5	53.7	23.8	
9.0	54.6	8.8	K
7.2	58.2	43.4	K
9.5	26 24.1	53.0	
9.0	38.0	15.0	Kb
9.5	27 6.4	40.1	
9.5	20.2	24.5	
9.5	23.2	15.3	a
8.5	43.6	51.7	
7.7	50.3	0.1	K
9.5	54.7	20.0	
0pr.	+ 29.74	+ 1.18	

4161—4220

m	19h	+4°	
	′ ″	′	
9.5	28 18.4	46.0	
9.5	19.6	50.7	
9.5	42.8	16.4	
9.2	58.4	48.9	b
9.0	29 3.3	27.6	
9.4	9.3	23.7	
9.5	44.4	38.0	
8.9	30 8.7	20.6	
9.2	31.1	58.6	
9.5	35.8	0.2	
8.3	31 5.2	40.7	K
9.1	9.6	54.5	a
9.5	11.8	55.4	
9.4	12.8	14.6	
9.5	34.9	34.6	
9.5	44.2	57.5	
9.2	32 6.8	3.3	b
9.3	11.5	10.8	
9.4	50.0	24.5	
9.5	50.6	27.1	
8.4	33 4.2	0.5	K
9.5	8.9	12.6	
9.2	19.1	19.8	
9.5	30.8	33.0	
9.5	38.9	50.0	
9.2	49.5	6.9	
9.5	34 13.1	18.0	
9.5	15.4	44.3	
9.5	31.2	3.0	
9.1	32.4	23.7	Kb
9.4	39.3	36.1	
9.5	40.0	54.1	
9.5	50.7	55.1	
9.2	35 22.5	6.1	
8.0	24.2	36.9	K
8.8	24.9	17.8	
9.2	40.0	41.6	aB
9.1	41.0	25.5	K
9.1	45.8	41.3	aB
8.6	50.6	1.5	B
9.5	36 3.2	53.7	
8.3	6.2	33.0	K
9.4	23.9	1.7	
9.4	32.9	35.1	a
8.3	41.0	24.8	K
9.3	53.4	51.1	
9.3	53.6	38.0	a
9.5	37 7.5	27.0	
*8.7	16.5	49.9	
*7.5	21.4	38.4	K
9.5	24.8	45.6	
9.5	59.8	33.1	
9.0	38 1.7	39.5	
9.2	17.1	29.8	a
8.9	25.3	28.4	K
9.3	25.6	12.5	
9.0	30.0	55.8	
9.5	49.6	40.3	
9.5	54.0	18.8	
9.0	39 4.4	36.5	
10pr.	+ 29.76	+ 1.34	

4221—4280

m	19h	+4°	
	′ ″	′	
9.4	39 6.7	55.4	
9.5	8.2	27.3	
9.5	27.0	29.8	
8.7	33.5	48.8	
9.5	43.9	52.9	
9.3	46.4	6.4	
8.4	51.5	10.6	K
8.8	52.6	42.3	
9.3	56.9	58.4	
9.4	40 35.8	6.8	
9.4	54.7	58.3	
9.5	41 2.5	54.4	
9.5	9.6	7.2	
9.4	25.4	48.8	
9.3	26.8	27.4	
9.3	27.4	32.8	
9.5	42 21.6	51.7	
8.9	40.0	25.7	
9.3	49.5	10.4	
9.5	50.2	25.2	
9.5	56.8	33.5	
9.5	43 20.3	6.9	
7.8	38.3	4.0	L
9.3	41.9	49.2	a
9.3	42.0	42.6	
9.5	48.7	20.3	
8.7	48.9	43.3	
9.5	49.0	27.5	
9.2	44 12.6	34.9	
var	16.5	5.9	B
9.0	16.6	40.1	
9.5	18.9	52.5	
9.3	32.1	56.0	
8.5	38.9	48.4	K
9.5	55.4	12.2	
9.5	45 8.7	58.0	
9.5	16.2	2.9	
9.2	17.8	30.7	
8.6	24.6	53.2	
9.5	33.9	26.2	
9.5	49.7	44.0	
9.2	46 5.3	40.3	K
9.1	6.0	59.9	aK
6.5	10.5	2.3	K
9.4	14.3	6.1	
9.5	35.5	9.7	
9.4	38.0	58.5	
9.0	40.0	19.3	
9.5	42.2	15.5	
8.7	47 1.4	41.8	K
9.5	14.1	30.7	
9.4	27.5	47.5	
9.4	34.0	52.6	
9.5	36.9	15.4	
9.1	49.7	55.7	aB
9.3	53.3	56.0	aB
9.5	48 0.9	51.6	
9.5	8.5	46.6	
9.5	19.5	47.4	
9.5	21.9	54.0	
10pr.	+ 29.78	+ 1.46	

4281—4340

m	19h	+4°	
	′ ″	′	
9.0	48 32.4	27.2	
8.8	43.5	12.5	
9.4	49 23.1	35.3	
9.3	45.5	50.8	
9.5	55.7	31.1	
8.5	50 9.4	49.9	
9.2	16.5	3.5	a
9.5	21.4	10.0	
8.6	22.0	5.7	K
8.6	22.2	1.7	K
9.2	30.9	50.8	
8.7	50.8	33.0	
9.5	57.9	40.8	
9.5	51 13.9	4.0	
9.5	14.0	22.5	
9.5	21.7	44.6	
9.5	27.4	18.8	
9.5	48.1	30.6	
9.1	51.2	34.9	
9.5	52 5.7	10.1	
9.5	8.5	2.3	
9.2	19.4	39.1	aBb
9.3	23.3	39.4	aB
9.1	33.5	54.5	a
8.7	43.8	3.6	K
9.5	53 12.7	43.8	
9.3	18.0	57.4	
9.5	31.5	3.5	
9.5	33.1	25.2	
9.5	36.3	46.8	
9.5	42.4	20.4	
9.5	55.4	45.5	
9.0	54 26.7	51.1	
7.2	35.3	19.6	K
9.5	47.4	35.0	
9.5	49.3	26.7	
9.5	55 7.0	33.5	
9.1	16.1	42.0	
9.5	33.9	33.2	
9.4	34.1	31.5	
9.5	49.3	22.6	B
9.5	52.1	55.8	
9.5	52.6	28.0	
9.2	59.2	27.6	
7.5	56 0.8	19.9	K
9.3	23.6	59.9	K
9.5	31.2	27.9	
9.5	37.8	6.6	
9.2	56.2	25.4	K
*8.5	57 18.7	47.1	K
9.3	19.3	9.3	
9.5	23.0	22.9	B
9.2	23.7	43.0	K
9.5	43.1	4.7	
9.3	51.2	10.3	
9.5	54.1	34.1	
9.2	58 7.1	1.9	
9.5	10.6	42.0	
9.4	26.1	8.8	
9.2	30.7	44.7	
10pr.	+ 29.80	+ 1.59	

4341—4400

m	19h—20h	+4°	
	′ ″	′	
7.0	58 44.1	22.0	K
9.0	49.5	11.7	
9.5	53.7	58.6	
9.4	54.8	51.4	B
9.2	59 4.3	21.0	K
9.0	24.8	58.5	
9.5	59.6	41.3	
9.2	0 13.5	38.6	a
8.0	25.1	21.4	K
9.3	31.7	21.2	K
9.0	35.6	20.4	K
9.5	47.9	47.9	
9.4	52.3	28.7	B
9.0	1 23.6	35.8	
9.5	26.1	47.5	
9.5	29.4	35.8	
9.5	40.7	8.2	
9.5	2 10.5	30.5	
9.5	16.8	7.7	
9.0	25.3	34.5	B
9.5	31.7	44.4	
9.3	3 11.0	26.8	
9.5	26.2	28.2	
9.0	32.1	28.7	
9.5	32.7	40.6	
9.4	38.3	31.3	a
8.5	41.7	3.6	K
9.5	50.7	54.0	
9.1	50.9	30.0	a
9.5	4 0.0	20.8	
9.5	1.5	48.7	
9.5	7.3	8.2	
9.3	8.4	23.5	a
9.0	15.6	25.0	B
8.7	26.6	26.8	B
9.5	41.8	33.1	
9.3	5 4.0	24.3	
9.5	9.5	33.7	
9.2	21.4	28.2	aB
9.5	23.6	42.0	
9.5	25.9	1.7	
8.7	32.5	6.0	
9.2	46.5	27.5	aB
9.0	50.6	34.7	
8.0	6 12.1	53.4	K
9.5	39.1	41.7	
9.5	46.5	38.8	
8.5	7 2.6	35.4	
9.2	47.1	20.7	
9.5	52.1	58.5	
8.5	53.2	31.7	K
9.5	8 20.9	13.8	
9.0	30.4	13.4	
9.5	50.6	44.7	
6.5	54.4	8.6	Kb
9.5	56.6	47.2	
9.0	9 21.6	10.7	
9.1	22.4	41.0	K
9.5	22.8	27.5	
9.5	25.3	47.7	aB
10pr.	+ 29.82	+ 1.72	

4209 a
9.5 | 37 18.3 | 7.7 | B

4329 a
9.6 | 57 9.0 | 17.2 |

4401—4460

m	20h ′ ″	+4° ′	
8.9	9 29.2	35.7	K
9.2	29.7	53.2	αB
*9.5	43.6	41.0	B
9.5	55.7	55.0	
9.0	10 3.1	38.6	K
9.3	6.6	25.5	
9.1	24.9	22.8	B
8.5	28.6	33.5	K
9.5	54.1	50.3	
9.5	11 5.7	3.9	
9.5	6.6	7.6	
9.4	26.1	54.3	
9.4	32.5	48.9	αB
9.5	12 10.7	57.0	
9.5	14.0	13.5	B
9.5	36.1	55.9	
9.5	38.2	3.4	
9.5	56.1	44.7	
8.4	13 1.6	55.4	K
9.5	1.7	17.7	
9.5	11.3	59.2	
9.0	18.6	26.2	K
9.5	19.6	1.4	
9.5	38.2	32.9	B
9.5	41.8	39.9	B
9.5	45.3	44.1	B
9.3	55.7	6.1	
9.5	14 44.6	33.7	
9.3	59.1	29.6	K
8.8	15 7.1	28.6	K
9.5	12.0	29.0	B
9.5	12.1	34.7	B
9.3	40.6	50.4	
5.5	59.7	53.2	K
9.0	16 17.7	32.0	
9.3	41.9	2.4	
9.5	17 0.9	0.7	
9.0	14.6	6.9	
9.0	15.4	42.0	
9.5	17.1	51.6	
9.5	33.6	6.6	
9.5	18 12.2	58.1	
9.3	19.6	48.5	
9.5	32.0	45.0	
9.5	19 0.5	43.8	B
9.5	3.0	51.7	
9.5	8.9	5.6	
9.5	31.6	28.3	
8.8	20 29.2	12.1	K
9.5	32.1	39.9	
9.0	38.1	46.8	
9.5	45.1	28.2	
9.5	56.5	6.5	
9.5	21 4.6	13.4	
9.5	15.1	46.8	
9.3	23.2	0.6	
9.5	26.7	27.3	B
9.5	56.6	40.3	
9.0	22 5.1	38.2	
8.8	7.9	6.6	Kb
	+	+	
10pr.	29.85	1.86	

4461—4520

m	20h ′ ″	+4° ′	
9.3	22 32.1	31.7	
9.2	35.1	53.4	a
8.5	48.2	45.7	K
9.1	52.5	52.0	K
9.5	23 9.7	4.6	
9.2	14.1	8.6	
9.2	32.8	14.1	αB
9.3	47.1	19.0	
9.5	47.8	12.5	
9.0	58.6	42.9	K
9.2	24 12.4	49.9	
9.2	12.6	44.1	
9.4	17.9	20.2	B
9.4	24.9	35.6	B
9.5	46.5	10.8	
9.4	55.6	48.7	B
9.5	25 0.1	59.5	
9.5	9.0	10.6	B
8.3	12.0	47.2	αB
9.5	14.7	54.2	
8.9	17.8	29.4	B
9.0	45.1	50.2	
9.0	26 7.9	23.1	B
7.7	20.0	56.8	K
9.2	47.6	3.8	B
6.8	47.9	25.1	K
8.7	27 7.1	5.9	L
9.5	11.1	25.1	B
9.4	35.4	35.5	B
8.5	35.6	44.0	
9.5	53.5	51.8	
9.5	58.5	29.8	
9.5	28 5.8	9.0	
9.5	10.0	7.1	
9.3	12.6	30.6	
9.4	13.2	17.2	B
9.5	35.6	11.0	
9.5	47.2	52.3	αB
9.2	29 29.6	39.9	
9.5	33.1	39.9	
9.5	43.7	21.9	
9.0	30 6.6	32.4	
8.3	18.4	43.1	K
8.3	36.6	48.6	Kb
8.8	50.1	53.0	K
9.3	31 6.6	27.9	
9.5	16.0	50.9	B
9.0	51.1	18.2	
9.5	57.6	56.2	
8.4	32 16.0	27.6	B
9.0	23.1	12.1	
9.5	39.9	31.3	
9.2	46.4	16.9	αB
9.5	52.6	57.1	
8.8	55.6	30.6	
9.3	55.9	1.4	B
9.5	33 27.6	58.5	
9.0	35.1	10.7	
9.5	34 15.1	21.0	
9.3	17.6	33.4	
	+	+	
10pr.	29.88	2.02	

4521—4580

m	20h ′ ″	+4° ′	
9.4	34 37.2	22.1	B
9.3	47.4	7.6	
9.0	35 29.9	33.1	
9.5	40.5	54.3	
9.5	56.1	55.2	
9.5	36 2.7	57.0	
9.0	6.8	59.1	
9.5	18.1	21.4	
6.8	28.8	53.2	K
9.5	51.6	10.7	
9.5	55.6	41.3	
9.3	37 26.1	9.3	
8.7	31.6	22.1	L
9.3	36.1	46.8	
9.5	45.6	28.9	
9.5	38 1.0	17.2	
9.2	14.7	5.1	
9.3	30.0	14.9	
9.5	30.1	46.8	
9.5	32.0	15.4	B
9.0	51.2	35.2	Kb
9.2	39 2.6	19.3	
9.5	14.6	45.1	
9.2	35.0	1.2	
9.0	38.1	31.6	
8.2	40 18.6	46.1	Kb
9.3	21.1	20.0	
9.5	41 10.7	31.5	
9.0	20.6	4.4	
9.5	33.1	47.2	
9.0	37.1	39.9	
8.5	42 0.6	30.0	
9.5	23.6	44.7	
9.5	34.1	46.0	B
9.0	36.7	55.3	
9.3	52.2	59.9	a
9.0	43 14.2	31.7	K
9.3	16.0	24.1	
9.5	27.4	3.1	
9.2	36.0	18.3	b
9.5	48.6	25.2	
9 5	44 11.6	51.8	
9.5	14.5	26.5	
9.5	43.3	29.7	B
9.3	45 26.8	54.3	
9.5	43.8	19.5	
9.0	58.0	41.2	K
9.5	46 17.6	5.7	
9.2	24.3	33.9	b
9.5	37.9	41.9	
9.0	47 22.0	28.1	
9.5	33.7	46.6	a
9.3	36.8	48.1	K
9.5	44.3	18.5	
9.5	56.3	19.2	
9.4	48 16.4	31.9	B
9.5	12.9	18.6	
9.5	20.3	50.1	
9.3	33.5	34.1	
9.2	49 18.5	51.5	B
	+	+	
10pr.	29.92	2.17	

4581—4640

m	20h—21h ′ ″	+4° ′	
9.4	49 25.0	14.7	B
9.3	34.4	0.4	
9.4	44.0	27.9	B
8.2	58.8	31.5	K
8.0	50 7.4	48.1	K
8.5	55.4	13.6	B
9.2	51 7.8	9.2	b
9.5	25.0	54.7	
9.5	37.7	32.2	B
9.3	53 1.2	48.7	
9.5	44.3	15.3	
9.5	45.0	7.4	B
9.0	54 11.1	30.9	
9.0	55 7.2	38.4	
9.5	8.8	34.7	
8.6	13.1	59.7	
9.5	27.2	42.9	
8.7	44.5	40.4	K
9.5	52.4	54.9	
9.5	56 22.9	23.9	
9.2	32.2	11.5	
8.8	49.8	23.6	
9.0	55.0	45.9	L
9.2	56.0	31.8	αB
9.4	57 6.5	36.3	
5.5	21.6	55.4	L
9.2	27.0	13.6	
9.5	58 2.0	39.4	
9.4	5.5	6.0	
9.4	22.0	1.1	B
9.4	59 40.2	31.5	B
9.5	40.9	24.0	
7.5	51.2	52.3	
9.4	0 34.3	11.0	B
6.5	47.2	34.9	K
9.0	1 3.9	17.0	
9.5	13.4	38.7	
9.5	48.4	21.5	
9.5	52.9	55.7	
8.0	2 7.5	25.9	L
8.9	15.4	46.6	B
9.5	3 0.2	21.5	
9.3	2.9	40.7	
8.8	4 2.4	40.7	
9.5	30.9	15.5	
9.5	40.4	40.8	
9.0	49.7	8.0	
9.3	5 12.4	28.3	
9.2	6 50.5	44.5	αBb
9.5	7 0.0	3.5	
7.6	15.3	5.1	K
9.0	8 8.2	19.7	
8.8	14.8	54.9	
9.5	32.4	10.9	
4.5	35.2	39.0	K
9.5	35.7	53.5	
9.2	41.7	27.0	B
9.5	54.7	3.9	
7.5	9 32.1	40.4	K
9.0	35.3	2.8	
	+	+	
10pr.	29.98	2.35	

4641—4700

m	21h ′ ″	+4° ′	
9.2	9 46.7	26.2	B
8.4	58.2	1.2	L
9.5	10 28.6	50.0	
9.5	37.1	15.9	
9.0	53.8	20.8	
9.0	11 8.1	40.6	
8.8	10.8	46.3	
9.3	21.6	34.1	
9.3	46.9	3.6	
9.5	12 29.0	46.7	
9.5	13 8.3	6.3	
9.5	10.6	49.2	
9.5	14 21.5	13.2	
9.5	23.4	58.1	
9.5	24.0	33.2	
7.8	15 1.3	24.2	K
9.3	57.0	18.7	
9.0	59.0	32.9	
9.5	16 7.5	2.8	
9.5	15.0	45.6	
9.0	19.5	49.8	
8.8	27.1	7.1	
9.5	43.5	22.5	
9.5	50.9	51.0	
9.5	17 3.5	48.2	αB
9.5	23.5	23.8	
9.5	45.8	1.3	
9.5	46.5	46.1	αB
9.2	18 4.6	19.3	αB
9.5	45.5	13.5	
9.5	19 24.0	10.2	
9.3	24.5	25.6	
9.5	25.7	53.6	αB
8.5	26.7	50.5	K
7.0	20 2.5	46.3	Kb
9.3	14.2	9.6	
9.5	19.1	2.7	
9.5	19.8	21.8	
8.9	47.1	2.7	
9.5	47.1	22.5	
9.5	21 3.1	4.2	
9.2	7.8	7.8	
9.3	9.2	9.2	B
8.5	37.8	31.8	K
9.0	37.8	47.4	
9.5	45.0	53.2	
8.5	22 6.7	54.5	
9.0	8.8	46.5	Kb
9.2	13.9	12.9	αB
9.0	51.5	34.2	
8.8	53.5	47.7	K
9.0	23 31.1	45.3	
9.0	33.1	26.0	
8.5	54 7	55.3	Kb
8.0	24 40.5	40.1	K
9.5	42.9	31.5	
7.5	25 15.8	13.9	Kb
9.0	25.5	38.2	
9.5	26 17.8	9.1	
8.8	47.3	18.3	K
	+	+	
10pr.	30.04	2.55	

4402ª

9.6	9 41.0	50.1	B

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	21ᵉ		+4°			21ᵉ—22ᵉ		+4°			22ᵉ		+4°			22ᵉ		+4°			22ᵉ—23ᵉ		+4°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
8.5	27	21.3	46.0	Lb	9.5	46	10.5	43.4	B	9.0	5	54.7	50.5	K	9.5	30	12.1	10.3		9.3	54	6.6	25.5	
9.5		35.4	5.0	B	8.8		51.9	18.0	K	8.8	6	7.5	3.1		9.0		23.1	25.5		9.5		8.1	53.4	
8.0	28	40.8	50.5	K	9.5	47	42.9	37.6		8.7		40.2	47.3	K	9.3		37.5	34.9	B	9.3		18.1	30.7	
9.3		51.1	6.1		9.5	48	13.7	36.0		9.0		46.7	54.6		9.5		42.5	31.0		9.3		25.1	23.4	
9.3	29	1.3	42.8		9.3		52.2	16.6		9.3		47.5	6.4		9.0		46.6	25.7		9.3		33.6	51.1	
6.3	30	12.6	2.7	P	8.3	49	1.2	49.5	K	9.5		48.7	4.0		9.0	31	6.6	55.5		9.5		41.2	55.9	B
9.5		16.5	11.8		9.3		8.7	33.9		9.3	7	30.2	11.1		9.3		15.1	11.7		9.5		56.0	59.5	
9.0		28.0	17.0		9.2		20.1	55.6	Kb	9.5		36.7	25.0		9.3	32	2.6	51.0		9.3	55	20.1	41.4	
9.3		41.5	50.8		9.5		25.4	54.9		9.0		59.2	34.6	K	9.0		57.6	14.7		8.8		23.6	28.7	
9.5	31	0.3	55.7		9.0		31.7	48.1	K	9.0	8	0.7	48.7		9.5		57.6	29.0		9.0		26.2	2.1	K
8.8		1.5	41.9	K	9.5	50	0.9	30.5		8.5		18.7	30.8	K	9.5	33	16.0	10.4		9.3		42.1	15.7	
9.5		13.8	23.5		8.5		20.7	19.7		9.5		31.7	48.7		9.3	34	20.7	1.8		8.3		45.1	9.6	K
9.5		14.0	34.6		9.5		22.1	46.0		9.3		57.2	30.4		8.5		29.1	13.8		9.2	56	59.9	34.3	aB
9.0		41.3	39.4		9.3		22.8	41.8		9.0	9	3.9	57.7		7.5	35	2.2	23.8	K	9.0	57	23.1	44.1	
9.5		56.5	48.4		9.5		36.7	3.0		8.8		25.2	48.7	Kb	8.5		16.7	56.3		8.3		38.1	23.8	
9.5	32	3.0	13.5		9.0		47.2	12.2		9.3		51.2	52.8		7.0		34.1	12.4	K	8.7	58	37.4	52.5	
8.5		15.6	36.6	K	9.3	51	25.0	57.2	aB	7.8	10	11.2	26.0	K	9.5	36	28.1	4.5		8.7		47.2	52 8	
8.8		33.1	34.6	K	9.5		38.7	5.6		9.3		31.5	0.3		9.5		35.0	39.3	B	9.0	59	9.1	38.6	
9.5		37.8	6.6		9.0		59.6	54.9		9.3	11	23.5	59.0		8.8	37	2.1	48.3		7.8		28.1	15.7	K
9.5		46.5	14.5		8.5	52	8.8	5.2		9.4		30.0	21.2	B	8.7		11.7	7.1	Kb	9.5		38.6	52.4	
9.3	33	23.7	59.0		9.5		44.7	45.6		9.4		34.6	26.9		9.5		33.6	47.6		9.1		52.0	17.0	aB
7.0		45.3	21.2	K	9.3	53	5.1	48.2		9.5		51.2	36.4		9.1	39	10.1	26.2	B	9.0	0	7.6	19.0	
9.0		52.0	40.1		9.2		44.5	3.6		9.3	12	12.7	18.4		8.0		21.4	8.9	K	7.8		43.6	5.0	K
9.4	34	23.5	12.5	B	9.2		56.7	2.7		9.5		32.2	17.7		9.2		24.0	29.4	aBb	8.7		48.6	15.2	L
9.5		25.5	8.6		9.5	54	15.6	57.7		9.3	13	41.2	35.3		9.5		27.5	10.3	a	8.8		56.6	21.0	
7.3		52.3	9.8	K	9.0		22.7	11.0	K	8.5		59.8	59.9	K	9.5		54.8	54.6		8.5	1	30.1	33.8	K
9.5	35	25.7	1.3		9.0		34.6	24.5		8.8	14	6.7	18.4		9.5	40	10.0	14.8	B	9.0		46.1	20.0	
8.3	36	2.9	26.3	Lb	7.8		36.8	5.7	K	9.5	15	16.5	5.8		9.2		19.8	22.2		9.3	2	20.1	20 3	
9.4		8.6	56.2	aB	9.0		56.8	37.5		8.2		58.1	55.4	Kb	8.8		55.1	12.7		8.8		37.1	22.8	
9.0		27.4	0.6		9.4	55	51.0	10.0	B	8.8	17	2.7	20.1		9.3	41	33.1	5.7		9.0		52.6	52.7	
9.5		50.0	24.9		7.3	56	9.2	46.1	L	9.5		24.2	29.4		9.3		45.6	34.8	b	9.5	3	18.6	54.8	
9.5	37	30.3	56.1		9.2		21.2	33.5	B	9.3		26.7	49.5		9.5	42	20.3	8.9		9.5		32.5	23.0	B
9.5		33.0	43.2		8.5		21.2	16.0		8.3	18	8.4	0.2	K	9.3	43	44.1	22.7		9.5		40.6	51.0	
9.5		45.7	3.6		7.8		30.4	5.4	L	9.3		29.0	22.5		8.7		59.9	0.9	K	9.0		46.6	25.5	
9.5		51.0	48.1		9.1		40.0	35.4		9.5		44.0	5.2		8.0	44	5.6	14.8	K	7.1		54.4	13.4	Kb
9.5		51.5	27.1		9.5		47.0	38.9	B	9.5	19	7.2	10.8		7.0		21.7	0.9	K	9.2	4	2.6	5.3	
9.5	38	54.5	31.5		9.0	57	31.9	34.3	K	9.5		11.2	23.2		9.0		57.6	47.3		9.3		12.1	54.1	
9.3	39	1.2	45.2		8.0	58	21.0	39.4	Kb	8.8		45.8	5.8		8.3	46	52.0	49.3	K	9.3	5	10.9	16.6	
9.3		45.0	21.8		9.0		21.5	32.9	K	9.3	21	39.6	26.5		9.5	47	17.6	27.3		9.3		16.0	34.9	
9.0		56.9	26.3		5.0		22.2	21.6	L	8.6	22	17.5	54.6	Lb	9.5		21.1	2.3		9.0		36.8	20.3	
9.3	40	37.0	40.2	B	7.7		33.0	9.8	L	9.3		18.1	14 2		8.5	48	4.7	3.4	K	9.2		47.0	38.0	B
9.0		39.4	32.5	K	9.0		36.2	38.4		9.0		41.3	16.9		9.5		24.1	43.8		8.7		54.8	56.6	K
8.7		44.5	25.3	K	9.0		50.2	4.4		8.8		48.1	4.3		9.3		28.1	50.0		9.0	6	1.5	40.7	K
9.5		47.0	41.1	B	7.5	59	17.0	30.1	K	9.0		53.6	24.1		9.5		52.2	28.6		8.7		29.0	30.0	L
9.0		54.9	47.0	Lb	9.0		35.2	22.2	K	9.5	23	4.1	4.8		8.8	49	4.6	34.5		7.0		37.5	12.2	K
8.8	41	16.5	12.2		9.5		44 5	45.6		9.2		6.2	0.6		9.5		12.5	47.7	aBb	9.5	7	14.5	37.6	
9.5		21.0	52.7	aB	9.0	1	20.0	28.4		9.0		32.4	58.8		9.4		13.0	44.8	B	8.3		44.0	42.8	K
9.5		30.5	54.7		9.5		21.7	13.2		9.5	24	35.6	7.3		9.5		35.6	43.4		9.3	9	27.0	54.1	
9.0		38.0	42.2		9.5	2	9.0	5.7		9.5	25	24.0	56.0		8.7	50	10.4	7.8		9.0		45.0	38.6	
8.7		47.5	37.4	L	9.5		11.4	51.0		9.5		33.0	51.9		9.3	51	15.6	55.5		9.5	10	2.0	25.9	
9.5		50.2	21.5		9.0		15.5	59.1		9.5	26	8.6	37.0		9.2		24.5	30.5	aB	9.5	11	22.0	41.5	R
9.4	42	9.0	54.8	aB	9.0		18.2	28.6		9.5		17.6	22.8		7.8		24.6	33.5	K	9.1		25.0	22.7	B
7.8		35.4	32.5	K	9.0	3	0.5	39.0		9.5		53.5	39.8		9.0		40.6	55.7		9.0		26.0	22.5	L
9.3	43	19.7	1.1	b	9.1		8.1	55.3	a	9.5		56.2	54.0		9.5	52	34.1	32.7		8.5		29.0	37.0	K
9.5		29.1	54.8		9.5		30.7	42.2		9.5	27	16.1	0.0		7.0		41.0	22.1	Kb	8.8	12	45.0	51.3	B
9.4		49.7	32.0	B	9.0		35.7	26.7	K	9.4		17.0	36.0		9.5	53	7.2	2.3		8.8		46.0	29.8	K
9.2	44	2.4	31.1	K	8.7		50.7	35.3	K	9.5		18.0	44.0		8.3		42.6	48.3	K	5.5		59.0	35.3	K
9.3		45.5	22.5		9.3		54.7	29.5		8.6		42.6	48.7	B	9.3		44.6	56.5		9.0	14	41.5	42.2	K
9.0	45	46.0	37.3		9.3	4	7.1	54.2		8.3	28	15.6	37.2		9.5		46.4	36.8		8.8	15	4.0	43.2	
9.0		52.0	41.5		9.3	5	14.7	15.0	a	8.5		40.6	51.4		9.5		59.0	50.2		9.3		25.5	35.9	
10pr.		30.11	2.71		10pr.		30.17	2.86		10pr.		30.26	3.01		10pr.		30.37	3.15		10pr.		30.46	3.24	

5001—5019

m	23h	+4°	
9.3	15′ 42.0	12.2	B
9.3	44.0	48.9	aB
8.3	59.0	27.7	K
8.3	16 42.7	8.4	K
9.3	17 3.0	46.0	aB
8.7	46.5	7.5	K
9.3	18 53.5	39.4	B
8.8	19 12.0	41.5	
8.5	51.0	42.8	K
9.5	57.0	6.0	B
9.0	59.7	53.8	
9.4	20 20.1	2.5	
8.9	24.8	56.3	K
9.3	22 2.4	24.8	
9.5	4.6	35.9	
7.0	50.5	12.9	K
9.2	59.4	40.0	B
9.4	23 19.0	35.6	
7.5	17.2	26.0	Kb
	+	+	
10 pr.	30.54	3.29	

5020—5038

m	23h	+4°	
8.8	23′ 34.9	50.4	
9.5	24 1.9	59.4	
9.5	10.6	8.7	
9.0	42.9	29.0	Kb
9.0	25 22.2	38.7	
9.0	26 7.4	33.9	L
9.0	18.4	46.3	K
8.8	34.4	20.0	
9.3	27 0.4	52.2	
8.0	2.6	40.0	K
9.5	28 45.4	51.5	
9.3	29 58.9	13.8	b
9.5	30 16.4	8.6	
9.3	31 41.4	38 7	
9.5	32 13.9	0.7	
4.2	31.9	50.7	K
8.2	53.6	0.4	K
9.5	33 16.9	41.1	
8.8	21.4	23.2	K
	+	+	
10 pr.	30.59	3.30	

5039—5056

m	23h	+4°	
8.7	33′ 54.4	25.6	K
9.2	34 31.4	9.8	Kb
9.5	50.9	30.9	
9.5	35 40.7	38.8	
9.5	36 23.9	2.1	
9.5	37 15.6	49.2	
9.5	27.2	59.5	
8.7	55.1	18.8	K
9.2	38 18.4	2.1	
9.5	58.1	17.4	K
8.5	39 38.6	26.8	K
9.5	56.2	32.6	
9.3	40 44.6	3.2	
9.5	46.9	23.0	
9.3	41 27.7	28.2	
8.5	51.1	10.6	K
8.5	42 9.1	5.5	Kb
9.2	27.1	28.6	
	+	+	
10 pr.	30.63	3.33	

5057—5074

m	23h	+4°	
9.0	42′ 36.2	35.1	
9.5	37.6	42.1	
9.0	57.8	6.4	
9.5	43 23.2	22.0	
9.3	44 12.4	6.4	
9.5	45 3.8	0.9	
9.5	30.2	44.4	
8.7	45.9	21.3	K
8.4	46 8.8	0.5	Kb
7.9	41.1	4.8	K
8.5	47 10.2	15.1	K
9.5	34.7	4.0	
9.5	54.2	44.0	
9.5	48 22.6	8.5	
9.4	49 2.1	56.8	aB
9.5	2.9	19.2	
*9.0	50 22.8	35.4	Kb
9.5	44.1	43.4	
	+	+	
10 pr.	30.66	3.33	

5072 a

9.5	49	29.8	43.4

5075—5092

m	23h	+4°	
9.3	50′ 45.7	12.2	
9.0	56.4	50.8	K
9.5	51 14.8	22.0	
9.5	52 44.2	29.7	
9.5	59.2	21.7	
9.0	54 9.8	14.9	K
9.0	13.2	34.2	
9.5	15.3	52.5	
9.5	22.8	13.8	Kb
9.5	56 3.8	29.7	
9.5	28.7	24.9	B
9.5	58.2	48.0	
9.5	57 50.5	13.1	
8.8	59 30.8	38.6	K
8.5	36.5	29.6	K
9.3	49.8	37.2	a
9.5	53.8	3.1	
9.5	56.0	56.6	aB
	+	+	
10 pr.	30.70	3.34	

Zone + 5°

1—20

m	0h	+5°	
9.5	0 23.0	41.9	
8.0	58.4	48.7	K
8.6	1 5.2	57.6	K
9.5	33.3	59.4	
9.5	3 2.4	55.0	
9.5	2.7	19.2	
9.5	27.7	4.9	
9.5	46.9	22.8	
9.5	47.6	43.9	
9.0	4 29.4	47.0	
9.5	54.5	35.4	aB
9.5	55.5	14.5	aB
9.0	5 19.9	22.4	K
9.2	54.8	21.5	K
9.0	6 1.4	38.7	
9.5	4.3	52.8	B
9.1	8.7	51.9	aB
8.5	12.9	46.0	L
9.0	24.0	16.9	K
9.5	42.7	57.9	
	+	+	
10 pr.	30.75	3.34	

21—40

m	0h	+5°	
9.5	6′ 52.8	9.4	
9.2	7 3.9	23.2	
9.5	4.6	51.1	
9.5	44.0	59.4	
7.8	8 12.8	2.4	Kb
9.5	30.2	28.0	
9.5	48.3	3.6	
9.5	9 17.7	15.0	
9.5	28.8	44.6	
9.5	50.4	27.0	aB
9.0	10 0.3	12.1	
9.5	11 5.6	17.3	
9.5	4.0	0.7	
8.0	12 39.4	29.7	Kb
9.0	13 19.1	56.8	
9.0	24.5	9.2	
9.5	29.7	39.3	
9.5	14 6.3	53.3	
9.5	20.0	24.1	
8.8	24.5	5.0	K
	+	+	
10 pr.	30.77	3.34	

41—60

m	0h	+5°	
9.0	14′ 36.8	57.3	
9.3	37.3	33.9	
9.5	56.0	52.3	aB
9.5	15 1.8	2.5	
9.5	9.1	21.8	
8.8	46.8	45.3	
9.3	52.3	7.6	
9.3	17 44.4	30.4	
9.5	47.4	55.7	
9.0	18 24.9	45.3	
9.5	34.7	16.3	aB
8.5	51.6	17.6	K
9.5	19 14.0	24.8	
9.5	54.7	52.2	
9.4	20 58.5	5.0	
9.5	21 45.5	58.5	
9.5	22 6.1	12.2	aB
9.4	21.2	41.1	
9.1	37.9	32.0	aBb
9.1	39.6	40.7	a
	+	+	
10 pr.	30.82	3.33	

61—80

m	0h	+5°	
9.5	22′ 44.5	41.7	
8.8	23 45.6	4.2	K
9.0	24 0.6	9.2	
9.2	25 0.3	4.6	
9.5	7.3	45.3	
9.0	18.4	15.2	K
9.0	26 6.6	50.6	
9.5	15.1	40.8	
8.1	40.0	9.2	K
9.2	42.2	10.6	aB
9.2	42.5	29.6	b
9.5	52.5	55.5	
9.4	27 20.6	24.4	aB
9.4	29.5	22.4	aB
9.5	33.2	47.4	
8.8	28 26.4	34.2	R
9.5	41.3	18.3	
9.5	29 14.1	33.8	
9.5	30 29.0	15.5	
9.5	30.5	54.5	
	+	+	
10 pr.	30.87	3.32	

81—10

m	0h	+5°	
9.0	30′ 31.6	3.6	
9.3	39.4	14.8	
9.0	59.3	18.6	K
9.5	31 5.9	45.6	
9.0	6.9	14.5	K
9.5	37.4	47.4	aB
9.5	43.2	47.0	aB
9.5	48.3	47.1	aB
9.5	50.4	1.6	
9.5	32 3.8	53.1	
9.5	28.7	8.0	
9.4	33 8.2	56.7	aB
9.5	34 15.7	1.6	
9.5	22.9	47.4	
8.6	35 47.4	46.6	K
8.5	36 2.4	22.3	K
9.1	37 8.5	52.9	a
9.1	11.9	17.9	ab
9.5	13.5	56.1	B
9.3	53.2	35.2	
	+	+	
10 pr.	30.90	3.31	

101—160					161—220					221—280					281—340					341—400				
	0ᵘ—1ᵘ		+5°			1ᵘ		+5°			1ᵘ		+5°			1ᵘ—2ᵘ		+5°			2ᵘ		+5°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9.5	37	56.1	23.4		9.5	6	43.0	28.8		8.8	32	29.9	38.7		9.2	59	23.6	52.3	K	9.2	20	36.1	24.4	Kb
8.5	38	37.5	17.6	Kb	9.5	8	44.6	48.6		9.5		52.0	0.1		9.2		29.0	35.0	K	9.3	21	47.5	31.3	
9.5	39	6.5	18.3		9.5		54.3	5.4		9.5	33	31.8	16.4		8.5		37.5	46.4	K	8.3		55.0	6.7	K
6.8		53.8	56.8	K	9.5		56.3	14.9		9.5		38.0	44.2		9.0		50.8	31.5	K	9.5	22	9.2	21.9	B
9.5	40	4.3	35.2		8.3	10	4.6	7.2	Kb	9.0		41.9	21.6		7.5	0	12.0	17.6	Kb	9.3		14.8	16.0	
9.5		9.3	7.5		9.5		22.9	34.6		8.3		50.4	18.8	K	9.5	1	14.0	27.3		9.3		21.4	53.0	K
9.3		41.5	38.3		9.5	11	55.0	35.4		9.5		53.5	12.4		9.0		16.0	35.7	K	9.5		37.1	26.0	
9.5	41	18.3	10.7		8.7	12	13.0	24.6	Kb	9.3	34	11.0	47.7		9.5		40.8	45.8		9.4	23	0.6	37.0	aB
8.0	42	10.9	36.2	B	9.5		17.4	47.5		9.5		33.6	15.5		7.7		48.0	17.6	K	9.5		18.3	20.5	
9.5		32.7	4.3		8.7	13	9.1	51.7		9.5	35	4.9	53.3		8.3		55.0	30.8	K	9.0		45.6	6.1	K
8.7		40.3	56.3		9.5		31.1	41.4		9.0		6.5	9.5		9.5	2	10.5	56.0		9.5	24	3.5	55.7	
9.5	43	0.2	0.2		9.5	15	11.0	50.3		8.3	36	6.7	1.2	Kb	8.9		12.0	14.2	K	9.5		19.0	9.8	
9.4		23.0	19.0	aB	8.5		14.2	39.7		9.2		7.0	9.9		7.7		57.0	24.3	K	8.7		59.3	41.7	K
9.5		38.1	9.9	aB	8.5		49.7	58.9	K	9.0		22.0	17.5		9.5	3	1.6	39.2		9.3	25	4.8	4.7	
9.5	44	13.6	27.5		9.2		58.6	22.2	b	8.8	37	19.8	8.3		9.5		50.0	18.0		9.5		26.4	53.8	
9.5		58.7	57.7		8.2	16	13.0	44.8	K	9.5		21.1	5.2		8.5	4	24.8	56.7	K	8.2		51.7	3.2	K
8.7	45	9.8	52.2	K	8.0		51.0	42.7	K	9.5		52.1	5.1		9.5		55.4	52.3		9.3		57.5	52.9	
9.0	46	5.2	10.8	Kb	9.5		51.1	22.2		9.5	38	19.7	52.6		9.5	5	1.3	45.3		9.2	26	4.3	54.4	b
9.3		21.7	59.1		8.7	17	27.1	30.2	K	9.5		29.7	17.9		9.0		33.3	54.9	K	9.3		32.1	11.8	
8.1		29.4	1.0	K	9.4		29.8	55.2	B	8.7		38.9	48.3	K	[illegible]		44.1	5.2	ab	9.3	27	1.9	4.4	
9.5		56.4	56.1		9.1	18	31.2	9.0	ab	8.8		47.7	25.4	K	9.3	6	32.3	11.3		8.4		2.3	38.3	Kb
9.5		59.3	2.9		9.0		33.1	33.1		9.0		57.1	12.5	R	8.8		37.4	20.4		9.5		25.5	7.4	
9.5	48	8.8	59.6		8.8		36.9	54.1	K	8.7		58.3	25.5	K	8.0		55.9	57.9	K	9.5		47.3	3.9	
9.3	49	15.2	33.7	b	9.4	19	13.8	58.4		9.5	41	23.5	11.5	R	8.8	7	2.6	27.1		9.5	28	3.8	56.7	
9.5		35.0	54.0		9.3		32.2	9.5		9.5		28.7	32.6	[illegible]	9.0		47.5	48.7	K	9.3		11.8	3.5	
9.5		41.0	28.4		8.8		53.4	39.7	K	9.5	42	33.5	26.1		9.5		53.4	19.1		8.3		24.1	48.3	
9.4	50	15.6	3.4	K	9.5	20	1.0	8.0		9.5	43	1.2	26.7	B	8.8	8	18.3	56.5	K	9.5		33.5	4.8	
9.5		17.0	9.0		9.2		32.8	18.2		9.3		13.3	40.6	B	9.5		59.1	57.2		9.5	29	3.2	51.4	
8.6		24.3	4.3	K	9.2	21	17.7	13.0	K	8.3		16.4	49.0	K	8.8	9	4.9	51.0	K	9.5		25.8	6.3	aB
9.5		24.7	37.9		9.5		22.6	40.1		9.5		17.0	56.4	aB	9.3		27.4	36.8		9.3		33.1	26.5	
7.0	52	19.5	42.0	K	9.5		39.4	13.3		8.5		24.0	17.6	L	9.5	10	12.6	34.7		9.5	30	1.6	32.0	
9.1		34.8	30.2	a	9.5	22	24.8	14.9		8.7		53.9	8.7	R	9.0		42.4	45.7	K	8.8		49.5	39.0	
8.9		40.7	25.1	K	9.2		30.3	40.0	b	9.5	44	30.3	24.7		9.4		57.5	33.7	K	8.5	31	20.9	5.9	
9.5	53	24.0	18.5		5.0		35.7	24.0	K	9.5		33.5	27.5		9.0		58.6	42.8		7.0	32	38.6	30.1	K
9.5		43.1	54.6		9.5	23	16.2	45.2		9.0		46.4	49.4		9.3	11	4.5	48.5		9.5		47.0	51.9	
8.8	54	13.7	58.2		8.5		18.4	13.7	K	9.0		54.8	30.2		9.0	12	47.3	12.5	Kb	9.5	33	6.7	21.9	
9.5		24.5	25.0		8.7		32.8	51.3	K	9.5	45	8.2	59.4		9.5		58.4	3.2		8.0		30.1	27.1	K
8.6		46.5	5.4	K	9.5		35.9	57.3		9.5		40.1	28.2	B	9.5	13	2.7	5.0		9.5		46.8	21.9	
9.5	55	33.8	49.4		9.3		43.7	4.4		9.0		41.9	21.6		9.5		6.9	59.5		9.3	34	9.3	16.0	
9.3	56	5.6	0.5	K	9.5		46.0	35.8		9.3	46	24.7	54.1		9.5		24.3	9.0		9.4		16.4	5.3	
7.2		15.1	59.1	K	9.3	24	33.7	45.6		9.5		45.0	18.1		9.0		32.8	1.8		9.4		22.5	13.2	
9.5	57	3.1	25.7		9.3		33.4	51.7		8.0	47	44.9	42.5	K	9.5	14	17.7	6.3		9.3		54.8	36.1	
9.5		3.5	28.1		9.0	25	26.3	26.1	K	9.1	48	10.5	59.2	K	9.3	15	2.0	40.9	aB	9.5	35	3.5	31.2	
8.7	58	1.7	17.4	Kb	9.3		32.7	55.5		9.5	49	8.7	16.7		9.5		7.3	40.8	aB	9.5		49.7	3.5	
9.4		10.5	49.8		9.5		41.0	16.7		9.1		18.6	38.4	aB	9.3		31.4	14.9	aB	8.8	36	13.7	38.3	K
9.0	59	13.2	52.8	K	8.5		59.6	49.1		9.5	50	13.3	31.2		9.3		31.8	27.7	aB	8.2		56.1	2.1	K
9.2	1	11.4	55.6	b	9.5	26	16.6	40.0		9.5		49.6	24.5		9.3		33.1	43.1		8.3	37	6.4	9.4	K
9.5		44.8	18.1		9.2		19.9	4.9	b	9.3	51	12.3	28.0		9.3		38.1	20.6	B	8.8		17.4	43.3	
9.5	2	44.0	25.7		9.2		41.0	4.6		8.2		20.0	58.0	K	8.7		48.8	55.6	K	9.0		51.5	50.5	
8.7	3	1.8	58.7	R	9.3		50.8	41.4		8.5		30.5	43.4	K	9.3	16	7.1	33.8		8.7		55.0	27.8	K
9.5		15.0	28.5		9.5		54.9	37.6		9.3		39.2	25.2		9.5		7.5	1.4		8.5		59.2	56.5	K
9.2		22.9	4.7	b	8.3	27	12.6	51.1	K	8.8		50.8	45.6	K	9.3		25.1	51.4	K	9.5	38	19.3	27.2	
9.5	4	23.6	24.8		9.2		24.5	8.5	B	9.3		52.5	29.0		9.2		28.3	55.1	K	9.3		35.3	53.5	
9.5		46.8	58.7		9.3		25.5	10.0		7.5	52	23.6	20.6	Kb	9.5	17	0.7	7.5		9.0	40	4.0	15.4	K
9.3		59.7	0.3		9.5	28	15.7	12.2		8.8		34.9	58.6	K	9.5		28.2	7.2		9.0		58.8	14.7	
8.8	5	7.5	48.2		9.5		41.3	22.6		8.7		36.6	55.6	K	8.2	18	22.7	7.1	Kb	9.3	41	7.1	9.8	
9.0		7.6	52.6		8.8		44.6	31.2		9.3	55	24.7	18.3		9.5		33.5	12.5		8.3		12.6	57.8	K
8.8		12.5	59.1		7.5	29	8.1	58.1	R	9.0		45.4	31.6		7.5		41.3	37.6	K	9.5		48.3	14.7	
9.5		32.9	21.5	R	9.0	30	53.6	15.4		9.5	57	27.4	4.5		9.5	19	15.5	30.7		9.5	42	52.3	14.3	
9.5		39.0	31.2		9.0	32	26.0	0.5	K	7.8	58	19.5	58.8	K	8.5		27.8	35.1	K	8.5	43	14.0	55.0	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		31.00	3.26		10pr.		31.17	3.13		10pr.		31.28	3.02		10pr.		31.41	2.82		10pr.		31.50	2.65	

401—460

m	2°—3°	+5°	
	′ ″	′	
9.5	43 47.0	51.5	
7.9	51.1	14.6	Lb
9.1	59.1	11.4	aB
9.2	44 22.6	53.4	
9.5	45 0.6	8.4	
7.9	2.0	52.4	K
9.5	6.5	10.2	
9.3	15.8	42.8	
9.2	46 11.1	3.0	a
9.0	30.0	2.5	
9.4	41.6	55.7	aB
9.5	48.8	55.0	B
9.5	47 3.8	31.0	
9.0	35.8	38.7	
9.3	46.8	45.6	
9.5	51.8	22.0	
8.5	53.3	43.2	
9.5	48 0.0	59.1	
8.7	17.0	0.7	K
7.5	25.0	35.5	L
8.5	38.1	25.0	
8.7	40.6	57.9	
8.8	45.8	2.3	K
9.3	49 2.8	45.0	
9.5	6.0	58.8	
9.5	50 39.5	41.8	
9.0	51 11.2	8.2	K
9.5	14.0	11.2	a
9.2	25.3	17.9	Kb
8.8	48.8	44.5	K
9.3	52 8.0	18.1	K
9.5	23.8	32.1	
9.5	27.8	54.5	
8.3	34.5	3.0	
8.2	52.6	24.5	K
8.2	53 18.5	0.7	K
9.0	31.0	18.6	K
8.5	41.3	40.4	K
9.5	54 9.8	39.3	
8.8	34.7	5.1	
9.2	50.9	0.9	
8.7	55 8.2	10.3	K
7.2	49.0	39.7	K
8.0	56 8.8	33.5	K
9.5	57 21.8	33.2	
9.0	54.3	38.3	
7.8	59.6	33.2	L
8.7	58 3.5	57.0	
9.5	5.3	43.9	
8.3	55.2	4.0	K
8.5	59 11.9	5.0	K
9.5	1 43.3	52.2	
9.4	2 0.3	45.7	
9.4	21.2	48.6	aB
9.5	31.1	14.4	
9.5	3 13.3	23.7	
8.9	50.2	2.2	Kb
9.3	4 51.3	17.1	R
9.0	5 35.0	52.6	K
9.5	6 50.5	12.0	R
	+	+	
10pr.	31.60	2.44	

461—520

m	3°	+5°	
	′ ″	′	
9.3	7 41.2	18.2	R
9.5	8 11.2	19.3	
9.5	22.9	44.2	
9.4	44.4	2.8	
9.0	51.2	17.5	Kb
9.3	52.2	45.3	
9.5	9 27.5	37.3	
9.0	44.2	14.3	
9.5	44.4	38.7	
9.3	10 4.2	10.9	
8.7	22.6	56.6	K
8.8	43.5	24.8	K
9.3	46.8	41.6	aB
8.8	48.6	15.5	Kb
9.3	11 9.9	28.6	
9.5	11.1	9.1	
9.5	25.9	58.1	
9.3	28.5	10.5	
8.5	12 35.2	41.1	K
8.8	13 7.6	54.0	K
9.5	27.5	24.8	
8.8	14 14.6	9.8	
9.5	14.9	24.5	
9.2	15 24.8	51.0	b
8.9	45.2	1.7	
9.5	16 7.3	54.9	
9.5	43.9	16.5	
9.2	17 18.9	5.4	
9.0	19.2	31.4	
8.0	18 3.8	25.8	Kb
9.5	21.9	39.7	
8.4	26.4	1.9	K
8.8	51.9	32.1	
9.3	19 11.2	39.7	
7.5	51.8	21.7	Kb
9.5	20 24.5	43.9	
9.0	42.9	29.7	
9.0	21 46.9	23.0	
8.7	50.8	58.0	
8.5	56.4	25.7	
8.3	22 5.2	17.5	K
6.7	23 4.2	40.8	K
7.9	6.2	1.4	K
9.5	13.5	12.6	
9.5	50.5	6.0	
9.3	24 0.9	23.7	
9.5	38.6	51.1	
9.3	38.9	29.7	
9.0	25 47.0	51.9	K
9.3	26 27.9	21.0	
7.3	27 7.5	55.8	K
8.0	30.9	14.7	
9.3	46.5	34.0	
8.5	48.8	55.4	K
9.2	28 2.7	48.1	aB
9.4	31.3	44.5	B
9.5	35.0	50.3	
9.1	47.4	45.9	a
9.0	29 6.2	56.5	
9.3	53.2	54.2	
	+	+	
10pr.	31.70	2.17	

521—580

m	3°	+5°	
	′ ″	′	
8.0	30 12.5	9.6	K
9.2	16.5	0.9	
9.0	53.2	57.3	K
8.7	31 59.0	59.8	K
9.3	59.9	26.8	
9.3	32 25.9	25.1	
9.2	37.4	0.4	b
*9.5	33 1.5	42.5	
8.9	6.8	23.8	K
9.5	20.0	23.4	
9.5	40.5	17.2	
9.3	34 6.0	56.8	
9.0	56.5	15.4	Kb
8.7	57.9	0.7	K
9.3	35 33.5	16.8	
9.3	48.9	49.8	
9.3	36 7.2	41.1	
9.2	15.2	5.8	
5.7	37 58.9	35.4	K
9.2	38 12.6	54.0	b
9.3	39 33.2	25.3	
8.8	33.8	40.1	
9.5	40 1.1	48.2	
8.8	19.2	48.7	K
9.5	22.2	36.6	
9.5	47.8	1.4	
9.2	41 12.8	34.8	
8.8	19.6	32.7	
8.5	42 33.5	35.7	
9.5	58.1	50.0	
9.0	43 8.6	1.2	B
9.5	14.6	0.5	
9.5	47.8	51.8	
9.5	58.5	20.5	
9.5	44 0.0	8.6	
9.3	59.2	2.0	K
9.2	45 58.0	57.1	
9.3	46 40.2	10.4	
8.3	47 9.8	9.0	Kb
9.0	22.8	15.2	K
9.0	33.3	10.7	K
8.0	48 46.2	25.7	K
9.3	49 0.5	24.6	aB
7.0	19.8	36.4	Kb
9.5	43.5	21.5	
9.5	50 2.1	45.5	
8.3	2.7	18.2	L
8.5	6.8	3.9	K
9.4	21.1	32.3	
8.7	25.3	9.5	K
9.4	43.7	33.2	aB
9.3	49.3	43.4	
9.5	51 29.2	14.3	
9.3	52 32.6	53.2	
9.3	53 7.4	14.5	
9.2	8.5	1.3	K
9.5	9.1	11.8	
9.5	55.2	48.7	aB
9.5	55.7	26.4	
9.5	55 8.5	8.3	
	+	+	
10pr.	31.78	1.88	

581—640

m	3°—4°	+5°	
	′ ″	′	
4.0	55 27.2	35.2	K
9.5	34.2	17.6	B
9.0	56 2.0	18.8	K
6.2	3.7	1.7	K
9.5	59.4	18.8	
8.7	57 53.0	7.0	
9.5	53.1	49.5	
9.3	58 5.7	2.2	
8.5	59 2.2	18.4	K
9.0	0 7.5	18.5	
9.3	26.4	30.7	aB
9.0	26.7	43.1	K
9.0	32.7	48.9	K
9.5	45.9	25.9	aB
9.2	58.4	26.1	aB
9.5	1 57.5	46.6	
9.5	58.4	29.5	
9.5	2 35.9	37.2	
8.8	53 9	12.9	K
9.5	3 14.2	37.6	
6.0	36.9	8.6	Kb
9.5	47.5	10.3	
9.0	4 24.0	46.2	
9.5	31.5	42.4	
9.5	5 44.9	48.0	
9.5	6 10.5	14.6	
9.5	11.7	24.5	
9.0	18.7	33.0	B
9.5	30.5	48.3	a
9.4	58.9	1.1	a
9.2	7 7.2	0.9	K
9.5	33 9	24.6	
8.5	43.4	49.7	K
7.5	46.4	48.5	K
9.5	53.6	4.4	
9.4	56.2	52.5	aR
9.4	59.2	51.7	
9.5	8 29.1	28.4	
9.5	40.5	52.9	
9.0	9 18.7	59.7	K
9.3	10 34.2	53.3	
8.3	52.0	21.2	L
9.5	55.6	17.2	
9.3	11 10.0	4.3	
9.5	43.4	51.0	
9.3	43.9	32.4	
9.1	48.8	7.3	ab
9.4	54.0	17.1	
9.5	12 38.1	56.9	
9.5	40.5	35.5	
6.5	57.9	46.9	Kb
9.5	13 10.2	27.8	
9.5	24.5	2.1	
8.7	27.7	53.5	K
9.4	45.5	54.3	
9.0	55.4	2.2	K
9.3	14 15.7	52.6	
9.0	50.0	20.9	
9.5	52.0	26.7	
9.5	15 44.6	1.0	
	+	+	
10pr.	31.85	1.58	

641—700

m	4°	+5°	
	′ ″	′	
9.4	16 4.6	1.9	
9.0	17.7	42.0	K
9.5	25.7	46.7	
9.5	28.1	14.8	
9.5	17 16.2	45.1	
9.3	17.8	36.2	aB
9.5	35.7	39.7	
9.0	46.5	13.9	K
7.5	54.9	19.1	K
9.0	18 6.2	43.5	
9.5	7.6	51.2	
9.5	20.0	15.2	B
9.0	23.5	43.1	
9.5	30.2	23.7	
9.5	53.7	10.1	
9.5	19 13.5	26.1	
9.5	56.4	3.4	
9.5	59.0	16.3	
9.3	20 45.4	52.3	
9.0	48.4	45.9	Kb
9.5	21 32.5	38.5	
9.4	37.8	28.8	
9.5	46.4	56.4	
9.4	49.1	26.1	aB
9.5	22 17.7	0.3	
9.5	40.0	48.3	
9.5	23 34.4	31.4	
9.5	52.7	36.2	
9.0	56.0	46.0	K
9.5	24 1.3	37.0	
7.5	8.4	26.8	L
9.0	12.9	46.0	K
9.5	15.7	54.7	
7.2	21.8	6.0	K
8.5	23.0	18.1	
9.1	46.4	56.9	a
9.5	54.4	7.3	
8.4	26 8.9	4.8	L
6.0	26.3	15.4	K
9.5	40.5	58.3	
9.2	27 17.2	27.7	
9.5	55.3	52.6	
9.2	28 7.5	35.4	b
9.5	23.0	8.0	
9.5	24.2	19.8	
9.4	49.8	0.4	a
9.5	50.4	51.4	
8.3	29 5.6	4.0	K
9.0	38.5	9.8	
8.7	30 11.7	29.6	
9.5	22.2	57.0	
9.5	35.0	8.5	
9.3	39.0	31.4	
9.5	31 6.2	51.9	
9.5	8.0	8.4	
9.5	34.5	9.5	
9.5	32 4.2	11.0	
9.5	9.4	2.2	
9.0	33 2.4	0.7	
8.5	4.2	2.1	K
	+	+	
10pr.	31.90	1.36	

527ª

9.6	32	56.3	55.0	B

1° — 5° +5°

m	4°	+5°		m	4° — 5°	+5°		m	5°	+5°		m	5°	+5°	
	701 — 760				761 — 820				821 — 880				881 — 940		
	° ′ ″	′			° ′ ″	′			° ′ ″	′			° ′ ″	′	
9.0	33 8.5	13.3		9.1	46 36.2	0.1	αB	8.7	1 58.7	35.6	K	9.4	11 8.4	51.3	
9.5	13.0	12.9		9.0	46.2	41.4		9.0	2 7.9	2.5		8.8	11.5	52.8	K
9.5	23.4	38.6		9.3	55.6	5.4		9.1	10.1	54.9	α	9.3	43.8	19.7	
9.0	46.5	16.0		9.3	47 4.0	37.9		9.0	10.4	23.1		8.6	51.5	1.3	Kb
9.5	51.9	25.7		8.3	38.4	23.0	K	8.8	16.6	8.1		8.9	56.9	29.7	K
9.3	34 15.5	19.1		9.5	41.5	29.6		9.4	36.7	44.8		9.4	59.5	53.3	αB
9.0	23.0	31.3		9.5	56.0	49.0		8.0	50.0	7.8	K	9.5	12 12.9	20.4	
9.5	24.9	55.2		9.5	56.7	4.3		9.5	3 27.4	48.9		9.5	14.3	18.6	
9.5	32.3	52.8		7.3	48 15.9	9.6	K	9.1	34.1	52.2	α	9.3	18.2	37.4	
8.8	39.5	42.0	K	9.1	20.3	57.0	α	8.5	46.1	31.8	L	9.3	46.0	54.2	
9.5	56.2	45.2		8.7	29.2	47.1		9.5	48.9	46.2		8.5	47.1	30.7	K
9.5	56.5	1.6		9.5	33.2	22.6		9.5	50.0	58.9		9.3	56.4	1.1	
9.3	35 15.4	49.1		8.8	49 6.2	48.8	K	8.8	4 4.0	48.9		9.3	13 12.3	42.6	
9.5	56.2	46.5		9.5	7.4	31.2		8.5	7.1	13.6	L	9.3	20.9	26.4	
9.5	36 0.0	12.2		9.5	9.7	19.0		9.5	18.5	16.7		9.0	51.3	28.8	B
9.4	17.2	18.6	αB	9.0	25.2	10.7		9.5	29.0	56.1		9.2	54.5	7.8	
8.8	19.0	44.9		9.5	50 27.7	4.1		9.3	30.6	28.2		8.5	59.3	43.5	K
8.3	37 8.2	1.7	K	9.5	51 2.7	16.2		9.3	35.3	41.7		9.4	14 12.0	31.3	αB
9.3	8.2	18.1		9.0	8.7	43.3		9.4	41.2	36.0	B	7.5	27.7	15.1	K
9.4	18.7	14.8		9.0	11.7	12.0	K	9.4	41.2	32.0	α	8.9	38.9	1.4	
8.5	19.2	35.5		8.9	28.9	0.2	K	9.5	47.5	23.0		9.2	15 2.5	40.5	
9.0	55.5	23.4	Kb	9.2	38.2	4.3	K	9.0	5 4.5	5.5		9.5	38.0	32.3	
9.5	38 32.3	11.5	αB	9.0	52 11.0	41.6		9.5	12.3	55.0		9.5	43.1	33.3	
9.0	32.5	44.2		8.8	53 6.8	38.5		9.5	26.5	3.3		8.3	48.8	41.2	K
9.5	54.3	59.1		9.5	22.0	38.1		9.3	28.4	26.5		7.0	49.6	10.4	B
9.5	59.2	8.0		9.3	26.0	6.9		9.4	44.8	13.1	B	9.3	16 35.0	58.7	
9.5	39 4.7	32.0		9.5	40.2	5.1		8.5	46.9	35.6	K	9.5	43.0	41.3	
7.3	34.4	31.6	Kb	9.0	57.3	49.9		9.3	48.1	6.3	αB	9.3	47.5	18.0	αB
8.7	45.0	3.5	K	8.7	54 22.6	55.2		8.7	55.1	8.4		9.5	48.9	15.2	
9.5	40 3.5	28.5		9.2	39.7	0.6	b	9.5	6 14.5	33.1		9.0	17 1.8	41.3	
9.3	4.7	53.3		8.5	58.5	36.7	K	9.5	18.3	2.5		9.5	13.4	11.2	
9.0	23.5	0.5		8.9	55 1.3	58.0		9.0	20.1	45.5		9.5	32.1	10.0	
9.3	25.9	51.5		9.5	19.0	36.5		9.3	29.2	24.6		9.3	36.3	50.1	
8.3	52.7	19.5	K	9.5	37.5	59.1		9.5	39.9	48.8		9.4	48.2	16.1	
9.5	41 5.5	15.7		9.5	46.2	38.5		9.5	7 21.0	2.4		9.5	51.0	50.0	
9.5	34.8	23.1		9.5	48.0	57.3		9.0	24.1	11.5		8.2	18 5.4	49.1	K
9.4	41.9	18.5		9.2	56 23.9	41.9		9.3	27.7	41.6		9.5	27.2	12.1	
9.5	42 21.0	47.6		9.0	25.6	6.0	Kb	9.5	37.0	25.2		9.5	37.8	22.4	
9.3	28.7	25.1	αB	9.5	39.2	19.7		9.0	47.6	35.5		9.5	37.9	38.0	
9.5	38.7	27.5		9.0	44.7	33.2		9.5	50.4	40.3		9.5	44.8	52.4	
9.5	43 7.2	46.2		9.0	58.5	31.5		9.4	51.4	2.6	αB	9.2	19 4.0	10.6	
9.3	17.0	42.5		9.5	57 5.4	27.6		9.5	52.5	6.8		9.5	24.6	17.0	
9.0	19.9	10.5	K	7.8	20.5	55.5	K	9.5	57.9	53.5		9.5	32.5	17 8	
8.5	25.9	33.7	K	9.5	57.6	15.3		9.5	59.9	57.7		9.2	39.9	5.9	
4.0	29.9	22.2	L	8.7	58 16.1	26.6	Kb	9.3	8 5.7	28.0		9.5	45.1	7.8	
9.5	39.5	34.8		9.3	18.0	54.3		9.5	7.4	45.6		8.7	46.1	28.1	K
8.9	44.6	0.8		9.0	50.7	15.7		9.5	25.6	34.5		9.2	20 14.7	54.4	
9.2	49.3	14.4		9.4	59 8.0	54.8		8.9	34.6	8.3	K	9.5	23.0	52.5	
9.5	51.8	12.0		9.5	11.3	34.1		9.5	9 2.9	50.0		9.5	45.9	47.4	
9.5	51.9	19.6		9.5	31.2	42.6		9.0	14.0	47.7		9.3	55.9	18.8	
8.5	44 0.2	55.8	K	9.5	42.0	34.7		9.3	23.1	11.2		9.3	58.6	16.5	
8.9	2.5	13.9		9.3	58.1	53.2		9.4	32.1	47.4	αB	8.5	21 4.0	52.8	L
8.3	34.0	26.1	K	9.5	0 21.1	29.1		9.0	33.8	57.7		9.0	19.0	42.8	
9.5	54.1	21.6		9.5	21.5	1.6		9.1	35.1	51.5		8.4	54.2	6.1	K
9.5	45 36.7	32.8		9.5	31.3	56.3		7.8	49.2	19.2	Kb	9.4	22 9.0	41.3	
9.4	38.7	47.5		8.9	48.3	5.6	K	9.5	10 31.3	43.9		9.5	9.4	47.7	
9.5	46.4	55.8		9.0	59.8	12.0	K	8.4	32.0	9.4	K	9.5	12.7	44.8	
9.5	51.5	21.5		9.5	1 15.3	31.4		9.5	39.3	23.9		9.5	18.8	4.5	
7.8	57.5	45.9	K	9.0	21.1	51.7		9.5	58.0	9.2	B	5.5	23 2.0	50.0	L
9.4	46 18.2	49.7	αB	8.7	53 5	42.4	K	9.0	59.5	56.1	K	9.5	8.4	34.5	b
	+	+			+	+			+	+			+	+	
10pr.	31.93	1.14		10pr.	31.95	0.94		10pr.	31.97	0.78		10pr.	31.99	0.62	

m	5°	+5°	
	941 — 1000		
	° ′ ″	′	
9.4	23 14.7	47.8	
9.4	19.0	0.5	
9.5	21.3	2.8	
9.2	30.9	32.7	K
9.4	32.9	22.9	
9.5	54.5	54.7	
9.5	55.6	57.2	
8.0	24 3.0	11.5	K
9.5	9.6	22.7	
9.5	19.0	54.2	
9.0	21.2	56.0	
9.5	23.9	26.9	
9.5	25 5.4	30.3	B
8.4	25.9	9.9	K
9.0	32.3	42.9	
9.3	26 14.9	23.0	
8.3	40.2	18.5	
7.3	59.3	33.5	Kb
9.0	27 3.1	22.0	
9.2	5.0	25.3	
9.5	6.0	38.4	
8.7	25.7	21.7	K
9.3	29.6	44.5	
8.9	44.4	43.3	
9.3	48.4	25.6	
9.2	55.8	45.5	
9.4	28 5.7	43.2	
9.0	47.9	26.0	K
9.5	29 23.0	18.3	
9.5	30.1	36.1	
9.3	32.2	24.6	
9.3	30 23.3	52.1	
7.5	26.6	55.0	K
9.5	50.7	9.5	
9.5	53.0	33.6	
9.2	31 10.6	51.9	
9.1	12.4	23.3	α
9.5	13.0	56.9	
9.5	13.2	13.4	R
9.1	20.3	10.5	α
9.0	42.5	13.6	
8.4	53.5	43.6	
9.2	32 0.7	15.5	
9.3	11.8	7.7	
8.5	14.1	59.1	
8.2	25.6	34.9	K
9.5	33 2.6	35.0	
9.5	30.1	37.7	
9.0	33.5	59.1	
9.2	48.9	33.2	
9.2	34 3.0	45.6	
9.2	9.9	5.3	
9.2	32.1	46.7	
9.3	46.0	46.8	
9.5	57.5	55.5	
8.1	35 0.3	46.5	B
8.8	5.5	31.9	
8.5	13.2	9.6	K
9.0	16.4	26.3	
9.3	23.3	1.4	
	+	+	
10pr.	31.99	0.44	

1001—1060					1061 — 1120					1121—1180					1181—1240					1241—1300				
	5ª		+5°			5ª—6ª		+5°			6ª		+5°			6ª		+5°			6ª		+5°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.0	35	40.3	17.1	L	9.2	52	1.3	0.6		9.5	2	21.6	37.1		9.0	11	3.2	43.1		9.5	19	20.5	58.0	
9.5		51.4	46.1		9.5		22.2	42.2		9.5		54.9	28.9		9.5		7.0	4.3		8.8		44.6	11.8	
9.5	36	10.5	43.3		9.5		25.4	34.7		9.5		56.2	47.5		9.0		9.1	31.9		7.5		45.7	15.4	L
9.5		19.0	41.7		9.0		29.5	8.3		9.5		59.2	25.5		9.4		13.3	49.8		9.0		54.6	37.7	
9.0	37	31.4	24.5		9.5		39.2	50.7		8.9	3	28.8	4.6	K	9.1		16.1	59.3	*a*	9.2	20	2.8	26.4	
9.0		32.6	53.3		8.3		58.6	47.7	*R*	9.5		55.5	53.5		9.5		32.8	26.7		9.4		15.0	58.0	
9.5		52.5	13.6		9.5	53	15.6	58.6		9.2	4	2.8	28.0	*b*	9.5		33.2	0.3		9.5		25.8	6.9	
8.7		58.2	47.9	K	9.5		32.9	34.9		9.0		5.9	13.5		9.5		35.8	1.0		9.5		26.7	41.8	
9.3	38	0.4	57.8		9.5		50.8	10.4		8.8		28.8	12.3	K	9.2		37.9	53.4		8.0		30.7	21.5	L*b*
8.5		19.3	2.3	K*b*	9.3		52.4	13.5		9.2		32.9	27.3		8.7		43.4	9.1		9.5		31.2	32.5	
8.7		22.9	30.6		9.3	54	1.1	51.9		9.4		50.6	30.1		9.5		50.5	16.2		9.5		45.0	57.6	
9.5		45.3	10.6		9.1		10.8	20.7	*a*	9.5		53.4	47.7		9.5		58.7	33.5	B	9.3	21	1.1	2.7	
9.5	39	8.7	13.4		8.7		17.9	4.9		9.5	5	2.0	29.1		9.5	12	0.1	4.7		9.5		2.0	26.9	
9.2		38.7	57.6		9.1	55	21.9	43.1	*ab*	9.5		3.0	56.1		9.3		6.3	49.2		9.2		5.6	5.5	
9.0		55.3	38.2		9.4		22.0	46.7		9.5		10.9	42.1		9.3		23.7	5.1		9.3		10.0	5.9	
8.5		56.2	49.6		9.5		51.8	46.7		9.5		12.7	58.1		9.2		44.8	47.8	K	9.5		11.1	28.0	
9.5	40	13.5	28.3		9.5	56	3.4	14.9		9.0		30.4	16.1	K	8.3	13	1.0	20.4		9.3		20.2	36.2	
9.5		24.9	34.7		9.5		4.2	19.1		9.0		35.7	31.9		8.3		5.2	47.8	K	9.5		37.9	14.6	
9.3		41.4	25.2	*R*	9.0		6.1	58.2		9.5		44.9	35.4		9.3		14.3	51.0	K	9.5		49.8	41.2	
9.0		51.0	44.1		9.5		11.8	36.1		9.4		47.0	2.3		9.5		21.4	27.9		9.5		51.3	34.4	
9.3		59.4	47.4		9.0		13.8	13.1	B	9.5		48.8	27.4		9.2		22.7	2.8		9.0		52.7	47.7	K
9.5	41	14.6	55.9		9.5		26.5	30.7		9.5	6	8.2	22.3		9.5		39.6	22.0		9.1	22	2.6	26.2	*aB b*
9.2		21.2	12.8	*b*	9.5		37.6	36.3		9.2		21.9	32.7		9.0		48.9	31.9	K	9.5		17.7	32.7	
9.5		34.3	33.7		9.5	57	3.3	34.3		9.0		26.4	0.9		9.4		49.3	7.6		9.5		23.5	42.7	
9.5		41.9	39.9		6.4		14.6	25.8	L	9.5		31.5	53.4		9.5		51.4	40.2	*aB*	9.5		28.8	59.9	
9.0	42	17.0	53.9		9.5		35.5	53.3		8.8		40.8	12.8	K	8.7	14	8.4	28.7	K	9.5		34.9	30.2	
9.1		24.3	45.5	*a*	9.5		36.1	27.8		9.3		43.5	36.6		9.3		9.2	4.3	*aB*	7.1		48.3	57.6	L
9.0		31.0	52.9		9.5	58	4.3	53.5		9.5		59.3	31.5		9.4		12.2	37.8		9.3		56.9	28.0	
9.3		37.9	24.3		8.0		7.6	45.1	K	8.6	7	10.0	49.0	K	9.3		12.4	32.2	*aB*	9.3		59.6	48.9	
9.4		54.1	12.4	*aB*	9.5		14.0	31.0		9.2		25.8	49.9	K	8.7		14.5	26.3	K	8.9	23	0.5	58.0	
9.4		57.5	15.9		9.5		20.8	17.2		9.5		26.5	10.4		9.5		24.2	58.3		8.7		6.7	53.2	L
9.5	43	5.3	29.2		9.5		32.1	48.0		9.5		31.4	19.4		8.3		40.3	38.7		9.5		15.2	30.9	
9.1		35.2	3.2	*aB*	9.5		32.8	24.4		9.3		33.0	54.6	K	9.3		52.9	33.8	*a*	9.0		27.0	58.5	
8.7	44	41.6	16.2		9.5		40.4	16.3		9.5		43.6	5.1		8.5	15	1.8	11.5	K	9.5		30.7	55.3	
8.6		53.7	7.3		9.3		48.1	8.0		9.5		50.6	10.1		9.3		12.0	18.4	K	9.2		37.9	46.1	
8.6		54.6	49.5		9.1	59	14.5	2.5	*a*	7.5	8	31.4	9.3	P*b*	9.5		19.7	5.4		9.5		40.5	53.7	
9.1	45	4.1	15.5	*a*	9.5		25.0	0.8		9.5		32.0	31.5	*aB*	9.5		20.0	57.9		9.5		47.7	36.4	
9.0		19.0	39.5	B	9.1		26.0	45.5	*a*	9.4		42.0	30.7	*a*	9.5		21.9	21.1		9.0		53.9	1.8	
9.0		33.7	18.0	B	9.4		31.7	3.5		9.3		41.7	43.4		8.8		44.3	40.4		8.5		55.5	6.8	*B*
8.5		51.1	5.7		9.5		58.5	54.5		9.5		51.7	51.2	*aB*	9.2		54.6	5.0	K	7.0		56.0	52.2	L
9.5	46	20.6	6.5		8.8	0	1.7	35.2		9.3	9	2.2	45.6		9.5		58.8	20.7		9.0	24	9.8	2.0	
8.5		37.9	56.8		9.2		5.9	36.7	*a*	9.5		3.6	57.7		9.5		59.1	16.7		8.2		11.2	8.2	*B*
8.2		52.2	19.3	B	9.5		27.5	23.6		9.3		9 8	15.9		9.0	16	1.6	32.2		7.3		13.8	2.3	K
7.1	47	10.3	49.8	*S*	9.5		40.4	22.9		8.7		11.0	58.6	B	9.4		33.4	33.4		9.5		16.9	26.7	
9.4		10.8	35.6		8.5		41.2	0.5		9.2		23.7	7.8		9.5		33.7	48.7		9.0		25.3	4.6	
8.0		13.4	19.0	*B*	8.5		46.3	48.5	K	9.3		29.0	18.6		9.3		34.0	59.0		9.0		28.5	4.6	
9.4		39.2	2.1		9.5		52.9	25.1		9.0		31.1	46.1		8.9		40.5	23.8		9.0		31.5	14.8	B
9.3		51.0	34.4		9.5		58.9	18.2		6.5		36.1	8.6	K	9.0		42.7	22.0		9.3		43.8	21.3	
9.5	48	1.7	58.9		9.4	1	6.0	7.3		9.5		36.6	33.5		9.3		51.8	20.5	K	9.5		45.1	8.7	
9.5		8.2	30.2		9.5		21.1	32.7		9.3		46.1	44.5		9.5		54.9	34.2		8.8	25	12.2	30.1	
9.5		30.3	23.0		9.2		21.7	4.9	*aB*	8.6		54.3	52.1	B	9.4		59.2	26.7	*aB*	9.1		13.7	54.2	*a*
9.2	49	33.3	56.8		9.1		25.7	50.5	*a*	9.5		58.5	34.5		9.4	17	2.2	5.6		9.0		16.0	8.6	
9.4		43.5	48.0		9.4		33.9	18.3		9.3	10	3.0	53.1	*a*	9.2		9.0	50.9		9.3		17.0	2.9	
9.5	50	21.8	31.2		9.5		37.0	7.6		9.0		3.6	56.9		9.2	18	3.2	57.8	*b*	9.5		19.5	16.0	
8.3		31.6	48.4	K	9.5		46.6	47.3		8.9		16.3	58.0		9.5		30.4	41.2		8.7		27.4	34.7	K
8.3		33.7	29.1	K	8.5		48.3	40.9	K	9.5		18.6	28.1		9.5		33.1	3.4		9.3		47.0	8.8	
8.3		47.3	46.8	K	8.5		50.6	41.0	K	9.2		26.2	49.1		9.5		36.4	32.2		9.3		48.2	24.4	
9.2	51	2.8	39.3		9.5		57.4	5.5		9.5		30.9	42.2		9.3		44.9	8.6		8.6		50.7	45.3	K
9.5		21.5	57.4		9.1	2	4.7	19.2	*ab*	8.8		45.0	39.6		9.5		48.9	18.3		8.9	26	0.8	19.3	B
9.5		26.0	31.1		8.4		12.1	44.0	K	9.5		46.8	54.3		9.0		59.9	23.3		8.7		5.1	35.6	K
		+	+				+	+				+	−				+	−				+	−	
10pr.		*32.00*	*0.25*		*10pr.*		*32.01*	*0.03*		*10pr.*		*32.01*	*0.10*		*10pr.*		*32.00*	*0.20*		*10pr.*		*32.00*	*0.33*	

1301 — 1360

m	6ᵉ	+5°	
	′ ″	′	
9.5	26 20.2	44.4	
8.3	25.4	14.0	L
9.0	26.5	32.3	K
9.5	34.9	10.8	
9.5	38.8	18.7	
8.0	53.0	4.9	K
9.5	56.7	28.8	
9.5	57.7	4.4	
9.5	27 25.5	25.6	
9.4	27.1	8.8	
9.4	45.4	4.3	
8.5	45.4	37.4	K
9.5	54.8	21.0	
8.9	28 8.0	57.6	
8.5	12.0	25.6	K
9.3	14.0	28.1	
9.3	14.5	25.3	K
9.3	14.5	25.9	K
8.7	42.9	54.4	
9.3	44.8	4.0	
9.5	54.0	11.4	
9.4	29 7.1	31.6	αB
9.5	7.5	57.3	
9.5	8.1	46.7	
9.4	15.2	1.8	
7.8	19.5	38.0	K
9.5	21.1	33.6	
9.4	22.0	42.0	
8.0	29.1	55.4	B
9.3	33.6	15.6	B
8.2	50.9	46.6	K
9.5	52.3	32.6	
8.4	56.0	2.6	K
7.0	30 11.0	4.8	K
9.5	20.3	7.1	
9.0	23.9	25.3	
9.0	24.3	48.3	
8.9	24.5	56.4	K
9.5	40.9	24.1	
9.0	42.9	0.0	K
9.5	43.5	35.0	
9.4	31 5.3	16.0	
9.3	5.5	11.7	
8.5	7.9	48.6	
8.7	9.0	19.0	
9.4	22.5	34.1	
9.5	30.3	46.1	
9.2	33.1	34.6	
9.5	40.0	8.5	
8.8	58.0	18.9	
9.5	32 4.3	5.2	
9.3	6.8	12.3	
9.4	19.5	56.2	
9.5	31.1	53.4	
9.5	31.3	13.7	
9.0	35.0	2.5	Kb
9.0	41.3	23.4	
9.4	55.2	52.7	αB
9.2	57.4	55.2	
9.5	33 1.4	9.9	

10pr. + 32.00 − 0.43

1361 — 1420

m	6ᵉ	+5°	
	′ ″	′	
9.5	33 8.9	33.0	
9.0	15.3	50.2	K
9.3	16.1	30.0	
9.3	24.0	36.2	
9.5	29.9	18.5	
8.5	56.0	4.7	K
9.2	34 9.9	7.4	K
9.5	17.1	22.3	
9.3	21.8	6.3	
9.0	25.2	11.4	K
9.0	34.7	27.5	
9.5	40.6	2.5	
8.7	46.2	18.7	K
9.5	48.0	59.4	
9.5	35 3.0	34.0	
9.5	12.0	8.0	
8.5	12.2	19.4	K
9.5	24.5	7.5	
9.5	39.5	46.4	
7.0	41.6	59.0	L
9.5	59.3	28.0	
9.0	36 0.0	24.8	K
9.5	6.4	4.5	
9.3	6.5	32.8	
9.5	9.6	55.2	
9.4	14.2	36.5	
9.5	15.0	44.7	
8.7	26.5	21.0	K
9.3	33.3	45.4	
9.5	35.2	37.2	
7.7	43.5	21.1	K
9.5	37 5.7	28.4	
9.5	5.9	48.9	
7.8	30.9	22.2	K
9.0	36.2	58.9	
9.2	56.1	2.2	αB
9.5	59.8	54.4	
9.4	38 4.8	34.0	
9.3	30.6	9.1	
9.0	34.1	52.5	K
9.5	56.6	45.4	
8.7	39 7.2	22.7	K
9.5	8.1	45.1	αB
9.3	19.7	25.4	
9.5	21.6	57.5	
8.3	37.0	37.8	K
9.5	50.2	22.9	
9.2	40 0.7	25.3	
9.5	8.3	0.6	
9.5	26.1	5.3	
9.0	26.6	59.4	
9.3	36.2	15.3	K
9.5	36.4	46.8	
8.7	38.0	42.2	
9.4	40.1	5.0	
9.3	43.3	56.8	
9.3	46.8	9.9	K
9.5	56.4	14.6	
9.3	41 0.1	18.1	
9.3	0.6	35.1	αB

10pr. + 31.99 − 0.54

1421 — 1480

m	6ᵉ	+5°	
	′ ″	′	
9.3	41 4.0	9.6	
9.0	14.7	44.6	
9.5	14.7	35.8	α
9.5	15.0	15.6	
9.5	19.1	48.2	
8.8	22.2	44.7	
9.5	31.3	10.1	
9.3	42.0	53.1	
9.5	47.9	11.2	
9.5	42 3.1	1.1	
9.5	8.9	5.5	
9.1	15.0	25.9	K
8.8	17.0	50.1	K
7.5	28.3	49.8	K
9.5	29.0	52.6	
9.4	37.6	24.3	
9.5	42.7	43.0	
9.0	44.8	2.8	K
8.7	49.9	5.3	K
9.0	53.5	49.4	K
9.5	43 9.2	22.6	
9.4	21.7	8.5	
9.5	27.5	50.4	
9.2	38.9	43.4	
9.2	45.9	17.1	
9.0	47.6	35.7	
9.4	57.0	56.1	
7.2	44 4.8	15.6	L
9.5	6.9	42.2	
9.5	36.1	7.8	
9.0	46.0	19.3	L
9.2	45 0.3	55.7	
9.5	0.9	20.0	
9.0	3.8	31.6	
9.3	7.8	47.2	
9.5	13.7	6.2	
9.5	15.5	9.0	
9.5	25.9	5.3	
9.2	29.6	2.9	
9.2	31.4	26.4	
9.5	39.3	43.6	
9.5	46 13.4	39.9	
9.0	22.3	55.3	
9.2	26.6	51.8	α
8.1	35.9	17.6	L
8.5	41.6	50.0	L
9.5	53.8	8.2	
9.5	58.4	22.3	
8.9	47 6.0	5.2	
9.4	18.2	58.6	αB
9.5	25.5	15.6	
8.3	30.2	36.7	L
9.5	45.8	17.7	α
9.4	48 5.0	6.3	
9.4	5.0	5.5	
9.5	8.3	29.4	
9.5	9.3	49.2	
8.3	18.3	17.5	
9.0	29.9	48.3	
9.0	34.5	11.8	

10pr. + 31.98 − 0.65

1481 — 1540

m	6ᵉ	+5°	
	′ ″	′	
9.5	48 35.4	23.5	
9.5	48.0	7.1	
9.0	51.9	17.6	K
9.5	49 4.6	15.9	α
9.5	18.3	24.1	
9.0	26.1	17.5	K
9.3	27.1	12.5	αB
9.0	38.5	0.3	Kb
9.3	53.3	47.8	
9.3	50 14.4	11.7	
9.4	31.6	14.3	αB
9.5	34.6	14.5	αB
9.1	44.4	13.0	K
8.7	47.4	19.0	K
9.5	51 5.4	18.0	B
9.4	6.9	24.6	
9.5	14.3	22.8	
8.5	15.9	43.6	
8.7	18.6	50.3	
8.2	26.2	28.9	K
9.5	29.7	23.1	
9.0	32.7	16.2	K
9.0	52 11.9	53.1	K
9.5	20.6	4.7	
9.3	21.9	40.9	
9.5	38.4	50.2	
9.5	42.8	47.8	
9.0	59.0	25.6	
9.1	53 11.8	45.2	α
9.5	14.0	5.8	
9.5	20.2	9.0	
9.5	27.6	46.5	
7.0	59.9	1.3	Kb
7.0	54 11.6	45.6	K
8.8	44.1	44.2	K
9.5	55.9	41.4	α
9.3	55 0.5	52.7	
9.5	3.2	40.7	αB
9.5	9.1	38.2	
9.4	14.6	30.5	
9.3	25.4	8.1	
9.5	56 2.2	31.1	
7.8	20.3	21.1	K
8.8	27.4	25.3	K
9.5	32.8	38.6	
9.0	40.2	49.8	K
9.4	57 9.6	58.9	
9.5	17.6	57.7	
9.4	24.0	42.4	
8.8	39.2	30.9	B
9.5	47.5	35.5	
8.8	58 2.0	49.8	B
9.5	3.8	33.3	
9.3	11.0	5.4	
8.8	19.3	43.9	B
9.0	24.8	42.4	
9.2	37.0	27.9	
9.2	38.2	12.3	
9.5	46.4	53.4	B
9.5	56.2	45.9	αB

10pr. + 31.97 − 0.77

1541 — 1600

m	6ᵉ — 7ᵉ	+5°	
	′ ″	′	
9.4	59 5.8	43.3	
9.5	24.1	14.1	
6.5	25.5	7.9	L
9.4	43.0	32.8	
8.8	47.0	21.9	K
9.4	50.2	9.0	
9.4	53.9	38.3	αB
9.3	0 6.0	4.0	
9.5	35.1	59.9	
9.5	40.4	42.8	
9.5	42.0	35.9	
9.2	49.1	7.1	
9.2	51.1	0.3	K
9.5	1 13.7	30.8	
9.5	38.2	41.7	
9.4	38.8	58.0	
9.5	47.3	47.9	
9.5	54.3	38.1	α
9.5	59.6	56.5	
9.2	2 2.6	39.7	B
9.5	3.3	39.0	
9.5	6.0	22.7	
9.5	13.2	3.7	
9.2	22.6	7.5	
9.5	34.5	59.3	
9.1	37.9	32.0	αb
9.3	46.4	8.0	
8.5	3 2.3	58.1	K
9.5	11.7	5.1	
9.5	25.1	38.3	
9.5	27.2	30.6	
9.4	28.5	35.6	αB
9.5	34.0	10.0	α
9.5	38.7	57.1	
9.5	43.5	5.6	
8.4	4 2.0	10.7	
6.0	7.5	53.5	K
9.5	10.4	32.5	αB
9.5	14.8	35.5	
6.5	24.2	43.2	Kb
9.3	29.0	40.8	
8.5	40.7	2.8	K
9.5	47.5	58.5	
9.3	56.0	33.8	B
9.5	58.5	9.6	
9.0	5 6.3	19.4	
9.3	15.2	57.5	
9.5	27.9	10.6	
9.0	38.1	29.4	K
9.4	6 13.8	44.0	
9.4	20.8	0.4	
9.4	24.1	9.6	
9.2	26.8	24.2	
9.1	31.9	1.2	αB
9.4	36.4	3.2	
9.5	44.5	45.7	
8.0	51.5	30.8	L
9.5	7 0.6	55.4	
9.0	3.1	40.2	
9.0	6.7	4.0	

10pr. + 31.96 − 0.91

1328ᵉ
9.2 | 29 27.9 | 12.9 | B

1601—1660				1661—1720				1721—1780				1781—1840				1841—1900			
	7ᵃ	+5°			7ᵃ	+5°			7ᵃ	+5°			7ᵃ	+5°			7ᵃ—8ᵃ	+5°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.8	7 16.4	46.8		9.5	18 37.8	34.4		8.9	28 53.0	34.8		9.5	38 33.3	54.3	*a*	9.3	48 56.6	32.6	
8.1	19.5	3.0	L	9.5	40.5	7.5		9.5	29 3.0	0.6		8.8	41.2	46.8		9.3	49 2.6	18.4	
9.2	30.6	54.2		9.5	41.2	9.4	B	9.5	12.0	7.4		9.5	39 7.9	39.1		9.5	6.3	50.6	
9.5	36.9	2.2		9.2	19 5.2	27.8		9.5	19.1	53.8		9.5	8.9	28.9		8.2	47.1	40.2	B
9.2	41.3	34.5	*a*B	9.5	8.8	39.3		9.1	20.8	29.7		7.7	20.1	16.8	Kb	8.2	50 25.4	24.1	Kb
9.5	55.4	18.4	*a*	8.9	26.3	50.4	K	8.0	38.2	43.4	L	8.8	52.7	16.2	K	9.3	29.1	39.4	
9.0	8 8.7	10.2		8.7	31.8	26.5	K	9.4	39.3	8.5	*a*B	9.5	53.9	36.2		9.3	47.3	56.5	
9.2	22.7	21.5	*a*B	9.5	35.0	39.7		8.7	47.7	32.3		9.5	56.0	48.3		8.1	51 33.0	39.1	K
9.1	22.9	6.2	*a*B	9.2	42.0	54.4		9.3	47.8	8.4	*a*B	9.2	40 19.8	7.7	K	8.6	41.9	54.7	Kb
8.8	27.5	50.7	Kb	9.2	44.2	7.1		9.5	30 12.8	40.1		7.0	21.6	46.1	L	9.3	45.3	39.8	
8.4	36.5	19.7	*B*	9.2	20 5.7	50.7		8.4	20.6	55.1	K	9.0	23.5	34.3		9.5	55.8	4.5	
9.0	47.4	37.1		9.5	35.9	18.8		9.3	24.5	41.5		9.0	25.3	48.9	L	8.3	52 1.0	16.9	
9.5	47.6	51.9	*B*	9.3	36.7	5.4		9.5	31.6	14.6	*a*B	9.4	40.4	5.8		8.9	35.6	8.0	
8.8	57.5	56.2	K	9.3	50.2	24.6		8.3	36.2	15.4	K	9.0	42.2	33.7		9.0	46.1	42.5	K
9.0	58.1	36.8		9.0	21 6.3	56.1		8.7	45.4	24.0	K	9.3	46.9	51.7		8.8	53 9.5	25.3	B
9.5	9 15.5	54.2		9.3	10.0	33.3		9.1	53.4	35.0	*a*	9.5	41 0.4	7.8		9.5	11.3	31.8	
9.5	23.4	2.8		9.5	10.5	28.0		9.2	31 9.1	10.7		9.0	3.3	46.9	K	6.5	34.7	16.0	Kb
9.3	29.7	5.1		9.0	18.4	56.1		9.0	17.3	37.1	K	9.3	21.7	40.1		9.5	53.2	56.3	
9.5	51.3	6.0		9.5	44.3	22.9	*a*B	1.0	43.0	35.6	K	9.0	39.6	13.4		8.3	54 6.8	36.1	L
9.5	57.8	20.5		9.2	55.7	49.3	*a*B	9.2	32 2.5	54.1		9.3	40.7	16.8	*a*	9.5	55 3.6	49.9	
9.5	10 49.5	29.4		9.4	56.9	9.7	B	8.8	3.6	36.2	K	8.3	44.2	26.9	K	9.5	10.0	52.7	
8.7	11 32.2	3.8		9.4	57.4	33.4		7.5	25.1	33.8	L	8.5	47.3	39.7		9.5	14.1	33.0	
9.0	33.8	31.9		9.4	22 2.2	26.2		9.1	26.5	30.7	*a*B	9.5	42 18.5	25.3		9.3	37.6	38.0	
9.4	43.7	45.3	*a*	9.5	2.8	6.9		9.1	43.4	32.0	K	9.5	23.6	58.0		9.5	56 30.0	54.1	
9.4	59.9	47.5	*a*B	9.1	19.0	36.2	*a*	9.3	50.2	56.6		9.4	37.9	30.0		9.5	34.3	41.0	
9.4	12 37.2	2.1		9.2	36.0	59.7		8.5	33 5.9	19.3	K	9.5	41.9	38.6		8.9	57 5.4	9.7	
9.0	13 1.5	23.3		9.5	50.7	39.6		8.8	9.4	52.1		8.6	43 6.0	12.9		9.5	34.9	55.9	
8.9	19.6	54.1		7.8	51.3	32.8	K	9.5	14.7	26.4		9.1	6.0	13.9	*a*	9.3	36.2	2.0	
9.5	26.1	28.8		8.7	23 12.1	31.9		8.3	26.8	55.3		8.9	21.9	40.6		8.7	37.2	50.3	Lb
9.4	31.0	16.3		8.5	24.7	16.5	K	9.0	38.5	56.6		9.5	42.4	28.5		9.0	58 3.1	48.5	
9.5	46.4	57.2		9.5	40.8	5.6		9.0	39.9	58.7		9.4	44.2	17.0		9.5	6.9	55.6	
9.5	57.8	37.2		8.3	46.0	12.6	K	9.0	50.8	45.0		9.5	44 12.5	13.8		8.0	24.9	58.4	L
9.5	14 18.0	1.7		9.1	49.0	15.7	*a*	9.5	34 11.1	43.2		9.5	14.5	6.9		9.0	31.4	26.8	
9.3	33.3	48.4	B	9.1	24 14.2	29.2	*a*B	9.4	14.5	34.1		8.1	17.4	43.7	K	8.8	51.3	34.1	
8.3	40.8	52.8		9.1	26.1	1.2	*a*	9.4	39.0	15.5		9.2	26.1	30.3	*a*	8.8	59 24.5	28.8	K
9.5	15 0.6	47.7	*a*B	9.3	31.1	51.0		8.1	53.8	9.0	K	9.5	30.3	31.2		8.8	26.9	32.8	
9.0	2.0	27.2		9.5	32.0	52.6		9.3	57.4	52.8	*b*	9.3	40.5	7.5		9.5	27.5	36.6	
9.5	11.3	47.9	B	9.5	41.8	54.8		9.2	35 5.2	51.4		8.8	41.8	1.3		9.5	42.2	40.2	
8.9	15.8	27.4		8.5	45.5	9.4	K	7.1	40.6	17.0	K	9.3	45.0	26.8		8.5	0 8.7	34.1	K
9.0	23.5	43.0		9.4	52.4	4.0	*a*	8.7	43.2	19.9	K	9.3	50.3	50.4		9.5	14.4	18.7	
8.3	27.9	39.2	K	9.3	59.2	58.6	*a*B	9.0	52.1	17.0		9.2	45 39.2	50.1		9.5	34.9	35.5	
8.7	51.4	8.9	Kb	9.4	25 0.0	58.4	*a*B	9.3	52.5	0.7		9.5	43.7	11.3		8.8	42.6	37.5	K
9.0	16 6.1	34.0		8.9	10.2	20.9	K	9.3	36 14.0	31.1		9.0	46 4.6	36.2		7.8	46.9	47.4	K
8.5	6.5	13.8	K	9.0	26.7	55.3		9.0	21.9	58.5		8.5	8.9	46.8	L	8.8	1 4.3	30.3	
9.0	20.5	7.8	K	8.5	31.0	13.8	K	9.3	44.2	17.8		9.5	18.1	11.0	*a*B	9.4	10.0	55.0	
9.4	28.1	51.7		9.5	36.5	40.7		9.4	48.4	59.1		9.1	27.6	3.7	*a*	8.8	14.7	19.0	
9.4	41.2	32.0		9.0	43.8	47.2		9.2	52.4	59.3	*a*	9.5	34.3	12.1		9.1	24.1	55.4	*a*
9.5	48.5	49 6		9.2	47.9	4.0		9.3	37 0.2	28.2		9.1	35.8	4.0	K	9.2	38.1	36.2	
9.2	55.8	33.4		9.5	26 8.5	42.7		9.5	16.7	38.0		8.2	47.2	53.7	K	8.8	49.9	31.4	
9.5	17 28.5	18.3		9.5	36.6	22.4		9.5	24.8	56.7		9.3	48.7	9.4		9.2	2 12.6	28.7	Kb
9.5	40.7	22.4	*a*B	9.5	27 4.4	57.0		9.4	37.0	32.6		9.3	56.6	38.8		9.4	20.4	6.9	*a*B
8.0	45.4	7.9	K	9.5	6.2	4.5		9.5	40.4	1.8		9.4	47 10.4	15.0	*B*	9.5	27.8	5.4	
9.3	56.8	54.1		7.6	20.6	36.9	L	9.5	51.9	32.7		9.4	17.7	2.5	*a*B	8.5	29.5	41.0	K
8.5	18 0.5	54.4	K	9.2	32.5	20.6	*b*	9.5	53.2	36.9		9.0	19.6	48.0		9.5	32.0	7.9	
9.4	9.1	38.1		9.3	43.9	49.1		9.5	38 7.3	36.1		9.4	23.7	20.1	*a*B	9.0	42.2	54.4	
8.3	12.8	30.8	K	9.5	56.3	19.8		9.5	18.3	58.9		8.7	55.4	23.4	L	9.2	55.7	33.6	*a*B
8.7	17.0	15.9		9.5	28 18.3	13.8		9.5	18.6	54.9	*a*B	9.0	56.6	40.0		8.5	3 20.3	52.4	K
7.6	21.1	51.8	K	9.5	19.3	15.8		8.3	18.7	25.6	L	9.0	48 36.0	1.4		8.5	28.7	43.5	
9.2	28.4	52.5		9.5	30.0	53.4		9.5	23.6	57.9		9.5	41.7	7.1		9.4	47.9	2.0	
9.5	29.0	43.4		9.3	35.2	29.4		9.5	25.9	36.3		9.5	43.4	57.0	*a*B	9.5	4 9.7	26.7	
	+	—			+	—			+	—			+	—			+	—	
10pr.	*31.94*	*1.06*		*10pr.*	*31.92*	*1.19*		*10pr.*	*31.90*	*1.33*		*10pr.*	*31.88*	*1.46*		*10pr.*	*31.84*	*1.64*	

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	8ᵉ		+5°			8ᵉ		+5°			8ᵉ		+5°			8ᵉ—9ᵉ		+5°			9ᵉ		+5°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.5	4	32.3	54.5		9.2	16	41.7	23.8		9.1	31	32.7	52.9	K	8.9	47	33.1	8.4	B	9.0	6	38.9	25.4	K
9.4		48.9	0.6		8.5		57.3	40.1	K	9.1		34.1	27.3	*a*	8.8		48.9	23.6		9.5		58.6	12.9	
9.0	5	7.1	54.8		9.5	17	10.8	57.4		9.5		45.9	12.5		9.0		54.4	59.0	B	8.0	7	18.9	3.2	L
8.0		13.4	21.6	K	8.3		12.8	49.1	K	9.4	32	37.0	49.2		9.5	48	25.4	18.5		9.5		57.1	27.1	
8.7		17.4	18.8	K	9.3		26.8	7.1		8.8		54.1	25.8		9.4		37.2	54.7		9.0	8	1.3	44.1	K
9.0		30.5	26.0		9.5		35.8	24.6		9.1		54.5	45.2	*aB*	9.0		43.2	29.6	K	9.5		18.9	4.6	
9.5		45.4	54.5		9.3	18	33.9	43.5		8.8	33	18.3	56.5	K	9.5	50	35.1	10.0		9.5	9	5.4	43.0	
8.7		54.4	32.6	Kb	9.5		41.0	44.4		9.0		23.9	25.4		9.0	51	22.5	44.8	K	9.5		10.9	35.7	
9.5		59.7	43.7		9.3	19	2.2	41.1		9.5		28.4	7.0		9.3		30.6	43.0	K	9.5		24.2	43.5	
9.5	6	7.7	42.0	*B*	9.5		26.6	54.5		9.5		36.4	38.3		9.3	52	16.7	35.0		9.5	10	5.4	47.5	
9.3		12.8	15.0		9.5		35.0	45.5		9.0		38.2	53.5	K	9.1		55.1	55.2	*ab*	8.8		18.5	48.1	K
9.1		38.1	38.4	*a*	8.5		45.6	9.8	K	9.2		39.1	5.6		9.5	53	1.0	8.4		9.0		25.3	54.7	K
8.4		56.5	44.8		9.0		55.0	24.3		9.1	34	2.8	9.6	K	9.3		7.3	21.5		9.5		27.8	13.1	*aB*
8.5	7	0.2	51.4	K	8.0	20	16.4	17.8	K	9.1		20.1	5.2	*a*	9.3		13.5	58.7	*aB*	9.5		34.6	21.8	
8.3		5.0	1.1	K	9.5		30.6	0.0		8.2		47.3	6.1	Kb	9.5		21.8	52.2		9.5		47.6	1.3	
9.3		17.7	38.9		9.5		56.1	6.3		9.5		47.9	43.4	*aB*	9.3		24.1	58.0		9.5	11	28.4	27.8	
8.5		25.7	51.8	K	8.9	21	5.1	1.1	Kb	9.3	35	6.2	16.3		8.8		29.6	31.6		9.5	12	5.7	4.8	
8.7		34.2	59.4	K	8.8		15.1	16.9		9.5		11.2	25.7		9.3		31.9	51.0		7.1		14.3	49.9	K
9.4		54.5	33.9	*aB*	9.5		39.7	57.2		9.5		19.3	25.7		9.5		44.4	5.6	*a*	8.9		16.0	44.0	K
8.8	8	32.7	28.6	K	9.3		42.6	35.4	*aB*	8.5		36.9	47.1		8.3		59.2	33.0		8.9		19.5	44.8	K
9.0		50.9	7.4		9.0	22	17.5	57.8		9.3	36	4.2	42.7		9.5	54	23.1	5.9		8.5		23.6	37.6	K
9.0		57.6	35.3		9.5		17.5	14.5		9.0		17.1	38.5		9.3	55	22.9	55.0		9.4	13	12.4	30.2	*aB*
9.5	9	12.5	53.6		8.5		24.4	42.8	K	8.8		22.3	24.3		9.2		38.3	26.4	b	9.0	14	24.7	25.5	
9.5		27.1	59.7		9.5		34.2	17.0		8.5		23.4	10.1	K	8.7		41.4	58.8	K	9.5		32.3	13.8	*aB*
9.3		30.6	24.3		9.2		36.3	54.0	*aB*	9.0		30.4	22.9		8.5	56	0.1	1.5	K	9.5		37.4	49.6	
9.3	10	14.3	28.7		9.2		47.8	21.4		8.0		50.6	48.5	B	9.3		41.2	44.4		9.3	15	20.3	12.4	
9.5		20.8	4.2		9.1		55.9	27.0	*a*	8.7	37	0.0	6.0	K	9.0		45.2	26.4	K	9.3		26.7	40.8	
8.0		42.2	31.9	K	9.5	23	3.0	36.9	*a*	9.5		21.4	3.8		9.0		50.7	25.0	K	9.1		48.9	11.2	*a*
8.0		52.9	38.4	K	9.0		27.6	34.2		7.5		56.6	11.1	K	9.5	57	1.7	6.4		7.5	16	2.8	49.7	K
9.0	11	22.7	48.5		8.5	24	17.3	29.0		8.5	38	31.4	47.9		9.0		20.0	57.0	K	9.3		7.2	26.6	
9.3		33.6	22.3		9.4		30.5	6.3		9.2		45.2	2.2	K	9.0		24.9	29.5		8.1		49.4	23.1	B
9.3		37.8	56.8		9.0		37.8	35.9		9.3		46.4	34.4		9.5		29.6	52.8		9.5	17	5.2	9.2	
9.5		46.5	34.3	*a*	9.4	25	14.1	12.0		9.5	39	30.7	7.3		9.3		50.1	37.4		9.3		56.1	44.7	
8.7	12	10.4	11.6	Kb	9.3		18.6	8.2	*aB*	9.3		37.2	20.8		9.2	58	3.1	20.8	*aB*	9.5	18	15.9	56.6	
9.4		14.8	35.5	*aB*	9.3		51.9	39.0		9.5		58.2	55.9		8.5		16.9	18.4		9.3	19	7.9	17.9	
8.4		19.6	33.6		9.5	26	2.9	49.7		9.0		58.6	19.2		5.6		20.6	40.5	K	9.3		44.6	57.6	
9.5		26.1	43.5		6.5		5.8	14.9	K	8.8	40	5.9	47.5		9.5	59	25.7	9.7		9.5		45.4	20.0	
9.3	13	12.0	48.7	*a*	9.5		44.7	8.7	*a*	9.5		18.3	38.9		9.5		28.2	12.2		9.1	20	40.0	30.3	*a*
8.8		22.3	27.0		7.2		53.3	59.9	K	8.7		34.0	58.1	K	9.5		48.6	48.8		9.0		40.5	36.8	
9.0		22.5	48.4		9.5	27	9.0	54.3		9.4		49.6	11.9		8.5	0	4.1	14.3		9.3	21	25.6	46.0	
8.5		35.6	38.2	K	9.3		10.4	45.5		8.9	41	2.1	38.8		9.0		10.5	56.1	K	8.8		33.9	41.1	K
8.8		54.0	24.3		9.3		10.4	21.9		9.5		48.6	40.0		9.1		31.0	24.6	*aB*	8.5		56.2	41.8	K
8.8	14	0.4	15.1		9.5		43.5	31.2		8.8		54.2	59.1	K	9.5		34.5	36.2	*aB*	9.0	22	3.4	11.0	
9.4		12.0	40.7		9.0		59.4	36.5		9.0	42	9.3	13.1		9.1		41.4	43.4	*a*	9.5		7.0	37.9	
9.3		24.2	51.9		9.5	28	11.5	58.6	*aB*	9.5		19.0	53.6		9.5		43.1	7.0		8.7		11.8	53.4	
9.3		25.9	7.7		9.3		23.3	51.6		8.8	43	6.7	40.6	K	9.2		52.4	25.8		9.5		14.4	44.9	
9.4		30.7	22.7	*aB*	9.5		30.5	59.6	*aB*	9.0		32.4	43.4	K	9.5		59.2	50.7		9.3		20.0	31.9	*aB*
9.5		37.9	4.6		9.5		57.3	15.1	*aB*	9.5		34.4	8.0		9.5	1	34.0	30.5		9.5		57.3	2.1	
8.5		40.1	49.1		9.2	29	5.8	26.4	*b*	9.5		48.5	54.8		9.0	2	2.1	21.9		9.3	24	0.7	40.4	
7.3		48.4	28.9	K	9.5		6.7	3.3	*aB*	9.0	44	0.0	39.9	K	9.0		12.0	37.1		9.5		33.4	26.2	
9.3		57.5	16.3	*aB*	9.2		20.4	30.3	*b*	9.0		0.4	30.3		8.3		17.2	48.0	K	8.8	25	6.2	47.0	
8.8	15	17.9	0.7	K	9.2		52.8	50.1		9.5		18.2	54.1		9.4		58.0	30.5	*aB*	9.3		50.1	18.6	*a*
9.4		23.8	19.9	*aB*	9.0	30	1.9	34.7		8.0		26.4	1.2	L	9.1	3	3.5	52.2	*a*	9.0		55.8	20.9	K
9.3		29.1	40.8		9.4		3.3	1.9	*aB*	7.3		45.3	53.2	K	9.5		28.6	15.0		9.5	26	29.7	35.9	
9.0		30.4	2.5		9.0		22.5	30.3		9.5	45	40.9	15.0		9.4		53.0	1.6		9.5		54.5	3.9	
8.5		43.8	59.9		9.5		35.7	53.3		8.8		47.2	46.5	Kb	9.3	5	11.2	15.3		9.5		57.9	47.8	
8.8		44.4	2.0	K	9.0	31	9.7	26.8	*B*	9.4	46	1.7	29.8	*aB*	9.5		28.1	6.7		8.8	27	1.7	37.3	
8.2	16	10.4	37.5	K	9.2		22.3	5.2		9.2		4.1	5.9		9.0	6	8.9	20.2		8.7		14.8	53.5	K
9.3		16.5	38.8		9.5		23.0	20.8		9.3		33.9	53.0		8.8		9.4	1.4		9.0		22.1	3.3	
8.8		17.0	32.9		9.5		28.9	5.4		*9.0		37.9	21.0		9.5		24.5	52.5	*B*	9.0		22.7	24.8	
10 pr.		+ *31.80*	− *1.81*		*10 pr.*		+ *31.76*	− *1.97*		*10 pr.*		+ *31.71*	− *2.13*		*10 pr.*		+ *31.64*	− *2.33*		*10 pr.*		+ *31.57*	− *2.52*	

2080ᵉ				
9.6	*47*	*12.1*	*7.6*	*B*

m	9ᵐ	+5°	
	2201—2260		
9.0	27 33.6	15.8	
8.7	46.3	16.8	K
9.5	28 22.2	41.5	
8.0	29.8	9.7	K
8.5	56.0	42.2	K
8.5	29 11.0	35.6	K
5.0	30 53.8	18.1	K
9.5	59.3	57.1	
9.4	31 29.5	36.6	
9.4	30.8	24.9	
9.0	51.2	43.6	K
9.5	32 12.6	8.9	
9.5	45.0	39.4	
9.5	45.1	19.4	αB
8.8	47.5	1.1	K
9.5	52.8	1.0	α
9.4	56.3	41.6	αB
9.0	33 7.5	3.3	K
9.2	25.8	10.8	
8.2	45.3	21.6	Lb
9.4	34 10.6	52.0	
8.6	25.2	38.2	K
9.5	29.1	24.4	
9.5	38.1	35.3	α
8.7	35 17.4	41.2	L
9.4	36 38.0	43.7	
8.6	45.6	35.5	K
9.0	49.3	32.2	
9.5	37 24.3	48.8	
9.5	41.4	40.5	
9.5	39 51.5	50.0	α
9.0	40 0.6	50.2	
9.5	8.2	17.1	
8.6	35.7	37.7	K
9.5	58.8	16.9	αB
9.4	41 6.1	4.9	αB
9.5	53.9	52.2	
9.5	42 30.0	4.6	
8.5	42.9	53.9	
6.7	58.0	1.2	K
9.5	43 8.1	17.5	
8.5	13.7	39.7	K
9.3	13.8	59.7	
9.0	44 51.8	6.0	
8.3	45 37.1	13.0	K
8.9	42.0	21.7	
9.0	46 27.5	38.0	K
7.4	32.1	37.5	K
9.0	47 18.3	53.1	
9.0	18.7	33.6	
9.5	38.3	56.2	
9.1	48 1.1	51.4	α
9.4	9.3	45.2	α
9.5	11.7	30.7	
9.5	49 1.6	17.5	
9.4	9.3	42.1	αB
9.4	9.5	35.9	αB
9.5	34.9	9.5	
8.4	55.7	47.6	K
9.1	50 15.6	30.2	α
10pr.	+ 31.47	— 2.72	

m	9ᵐ—10ᵐ	+5°	
	2261—2320		
9.1	50 44.1	54.9	α
9.5	51.7	35.3	
7.9	51 15.1	29.4	K
9.5	31.6	30.3	
9.3	55.8	44.8	
9.4	52 5.0	47.5	
8.1	8.0	55.1	K
9.5	27.5	43.0	
8.2	53 23.1	42.2	B
9.0	31.7	22.8	B
9.5	32.6	4.0	
9.5	54 57.0	15.9	
8.8	55 24.4	48.1	
8.4	40.7	22.0	K
9.5	56 0.8	56.7	
9.5	21.3	46.0	
9.5	34.2	31.1	
9.5	46.3	13.7	
9.0	55.1	47.8	K
8.1	57 14.1	42.5	K
9.3	21.2	30.3	
9.5	29.6	7.3	
9.1	45.1	47.1	K
9.4	58 2.6	28.5	
9.1	32.3	44.5	α
9.3	55.3	17.5	
9.3	55.4	10.7	K
9.5	59 53.4	9.6	
9.5	0 34.9	3.7	
9.3	1 3.5	34.6	
8.8	4.9	13.5	
9.3	2 28.0	44.8	
9.5	29.2	17.2	
8.8	41.5	20.8	
8.9	3 8.1	50.4	
7.9	32.5	58.1	K
9.3	47.5	56.3	αB
9.0	4 2.3	53.5	
9.5	48.7	1.6	
9.5	5 10.7	0.3	
6.5	16.5	19.6	K
9.0	46.1	59.8	
9.3	6 17.5	38.9	
9.4	38.2	56.8	
8.9	7 12.0	52.6	
9.5	35.5	22.9	
8.9	49.2	57.1	K
9.5	50.1	59.6	αB
9.5	8 32.1	20.2	
9.4	53.6	24.5	
9.4	9 3.2	39.6	
8.7	43.1	58.6	K
9.3	10 8.1	50.1	
8.9	16.2	20.6	
9.3	18.1	51.1	α
9.5	48.0	6.3	
9.4	11 0.3	10.2	
9.3	12 45.0	4.2	
9.3	53.8	46.1	B
9.5	54.3	55.7	
10pr.	+ 31.36	— 2.90	

m	10ᵐ	+5°	
	2321—2380		
7.9	13 10.4	22.8	K
9.4	36.6	44.2	
9.4	14 4.5	12.3	
9.0	12.0	2.5	K
9.5	31.4	35.0	
9.0	51.1	9.5	K
9.4	15 36.0	13.4	
9.5	16 19.9	18.6	
9.5	30.4	11.0	
8.8	17 18.5	15.0	
8.6	49.7	55.1	K
8.8	54.0	50.1	L
8.5	18 2.7	19.2	K
9.5	55.3	32.7	
9.5	19 42.0	48.9	
9.0	20 2.5	2.7	K
9.2	10.2	0.5	
9.0	12.0	12.7	K
9.5	21 2.4	11.5	
9.5	4.6	16.4	
9.1	39.9	21.3	αb
9.5	51.7	26.4	
9.4	23 16.9	37.7	
8.3	24 19.2	41.0	K
8.8	33.1	59.6	
8.9	36.3	56.9	
8.0	46.3	23.0	Kb
9.4	25 0.3	10.6	
9.3	25.3	33.7	
9.5	51.2	8.7	
9.5	26 31.7	35.1	αB
9.0	27 16.7	22.9	
9.0	23.2	17.6	Kb
8.1	43.6	34.5	K
8.9	47.3	50.4	
8.6	28 9.6	51.3	K
9.3	29 14.3	14.7	
9.5	19.3	19.2	
8.6	28.4	32.4	K
9.5	35.0	13.7	
9.5	30 1.3	6.6	
8.6	4.0	50.7	
9.5	11.1	27.8	
8.8	28.0	11.7	B
9.5	44.4	1.9	
9.1	45.2	27.5	α
9.4	31 28.9	38.3	αB
9.5	42.6	38.3	αB
9.5	43.1	1.6	
9.5	54.0	58.0	
9.5	32 4.8	57.0	
9.5	29.3	6.6	
8.9	29.8	34.1	
8.4	49.0	17.3	K
9.5	33 10.3	57.0	
9.5	12.3	13.2	
9.5	34 11.3	27.1	
8.4	17.6	3.1	K
9.5	26.1	31.0	
9.5	35 8.3	3.0	
10pr.	+ 31.23	— 3.06	

m	10ᵐ	+5°	
	2381—2440		
9.4	35 11.8	32.1	
9.2	12.3	27.0	K
8.6	39.0	25.4	K
6.2	50.1	30.9	K
8.5	54.8	3.3	
8.6	36 5.7	0.2	
9.0	37 4.3	4.9	K
8.5	28.4	6.1	K
9.5	35.2	34.0	
9.5	39.2	31.1	
9.5	38 48.3	8.3	
9.2	55.9	21.5	K
9.5	39 2.7	42.7	
8.0	5.5	25.2	K
9.0	10.2	13.7	
9.5	31.6	47.2	
9.5	37.1	25.1	
9.3	56.2	53.0	b
9.5	40 5.7	26.6	
9.3	17.3	59.6	
9.5	19.3	58.4	
9.5	50.0	44.1	
9.5	41 6.6	27.1	
9.5	12.7	43.4	
9.5	14.3	30.8	
9.5	42 11.7	9.0	
9.4	26.9	36.4	
8.7	49.4	4.1	
9.2	58.0	18.0	b
8.5	43 30.3	48.1	L
9.5	44 56.3	28.6	
7.3	45 6.9	46.1	K
9.3	14.5	0.8	b
9.5	28.3	14.6	
7.7	33.0	43.8	K
9.3	47 34.1	43.8	
9.5	48 33.4	5.2	
9.4	49 37.9	14.3	αB
9.5	39.4	14.6	αB
8.7	49.5	54.2	
9.5	50 17.3	29.9	
9.1	52.8	19 8	ab
9.5	51 r.4	36.3	αB
9.5	21.3	53.5	
8.5	52 3.6	7.9	K
9.5	39.1	14.0	
9.5	40.8	6.6	
9.5	44.3	54.2	
9.5	48.2	18.1	
9.5	54.4	15.1	
8.8	54 11.6	53.1	K
9.1	55 11.0	36.8	αBb
9.5	41.7	58.4	
9.3	56 0.0	57.0	
9.5	12.2	29.2	
9.5	30.0	6.0	
9.0	55.3	50.7	K
9.3	57 21.7	14.5	αB
8.8	33.7	56.3	K
9.5	58 0.4	1.6	
10pr.	+ 31.14	— 3.16	

m	10ᵐ—11ᵐ	+5°	
	2441—2500		
9.0	58 1.8	39.6	
9.5	10.6	23.0	
9.3	11.4	1.0	
9.5	21.7	46.1	
9.5	42.2	44.9	
9.5	59 14.2	11.9	αB
9.2	25.5	22.7	
9.5	0 3.4	36.6	
9.0	29.5	46.6	
8.0	50.3	14.8	Kb
8.5	1 15.7	47.6	K
9.0	27.1	50.8	K
9.2	2 50.4	1.6	b
9.5	3 7.3	32.7	
9.4	10.2	26.7	
9.5	26.1	15.7	
9.0	44.7	22.3	
9.0	49.8	52.6	
9.5	4 17.5	44.7	
9.5	5 20.1	45.3	
9.0	21.2	40.7	
9.0	28.2	28.8	
8.5	45.9	15.9	K
9.2	6 19.3	28.3	
9.5	41.2	47.2	
8.8	50.4	57.3	K
8.0	51.2	5.7	K
8.1	8 2.8	44.8	K
8.0	11.3	16.3	K
9.0	14.2	29.2	
9.5	42.3	7.6	
9.0	9 15.4	26.6	
9.5	56.9	24.1	
8.0	10 8.8	6.7	K
9.0	55.8	19.4	
8.5	11 9.0	54.3	K
9.5	51.3	47.9	
9.0	12 3.3	36.1	
9.5	9.3	20.2	B
8.5	13.4	54.1	
8.5	19.1	13.1	L
9.5	41.3	20.4	
9.0	53.9	25.2	
8.2	13 31.7	40.3	K
9.5	47.5	57.9	
9.5	58.0	28.5	
8.4	14 6.5	0.3	K
9.5	8.4	50.6	αB
9.4	19.6	8.5	
9.5	15 0.9	42.9	
9.0	34.1	37.6	
9.5	17 22.4	3.9	
9.5	36.0	22.9	
9.5	19 34.5	18.9	
9.5	56.0	30.1	
9.5	20 37.2	55.0	
9.4	21 8.8	47.8	
9.3	21.4	2.6	b
9.5	30.0	13.2	
9.5	22 17.7	12.1	
10pr.	+ 31.01	— 3.25	

2501—2560

	11ᵉ	+5°	
m	′ ″	′	
9.4	23 49.8	51.6	
9.3	24 10.8	20.3	b
9.5	20.9	1.3	
9.5	25.1	46.8	
9.5	27.4	50.2	
9.5	52.3	33.7	
9.5	25 21.0	23.9	
9.2	25.4	39.7	b
9.5	28 30.3	56.9	
9.5	29 21.7	53.7	
8.5	41.5	46.3	K
9.5	46.1	47.1	
9.5	46.3	38.5	aB
9.5	51.5	0.9	
9.5	54.4	33.5	
9.5	30 3.1	45.4	
9.3	20.0	7.9	K
9.4	42.1	24.0	aB
9.5	42.6	7.2	
9.5	55.6	8.7	aB
8.4	31 18.3	13.7	K
9.5	32 8.4	32.5	
8.5	18.1	40.5	L
9.3	50.9	10.5	
7.9	33 2.3	56.2	K
8.4	30.4	46.0	K
9.5	47.7	28.6	
8.5	34 12.4	23.7	K
9.3	19.5	57.3	
7.7	43.1	33.1	K
9.5	53.0	29.5	
9.5	35 10.3	51.1	
9.4	55.0	10.7	
9.5	36 19.9	5.1	
9.0	47.0	5.2	
9.5	37 39.4	54.4	
9.5	38 14.4	58.2	
9.2	54.1	37.0	K
8.5	39 34.4	41.2	K
8.4	36.5	54.3	K
9.5	40 0.8	5.6	
9.5	40.1	24.2	
9.4	41 32.6	3.3	
9.5	36.3	45.3	
7.2	41.3	59.2	K
9.0	42 43.0	42.9	K
9.0	51.8	45.4	K
9.5	43 19.8	1.7	
9.5	26.5	17.2	
9.5	39.1	18.1	
9.5	54.8	32.1	
9.5	44 0.4	1.0	
9.5	27.2	2.8	
9.0	45 52.1	30.7	K
8.0	46 38.7	40.8	K
8.7	44.4	47.8	K
9.5	49 25.1	48.1	
9.1	34.6	6.1	a
8.8	50 35.7	9.1	K
9.2	38.4	33.2	
10pr.	+ 30.86	− 3.32	

2561—2620

	11ᵉ—12ᵉ	+5°	
m	′ ″	′	
9.5	50 47.1	41.2	
9.0	53.2	23.8	B
8.3	51 4.6	8.6	K
8.5	22.7	38.4	K
9.5	24.7	47.8	
9.3	49.1	52.9	
9.5	52 23.8	22.7	
8.8	49.4	26.9	Kb
9.5	52.0	38.1	
9.5	53 16.0	17.2	
9.3	54 38.8	58.6	b
9.3	46.8	42.9	
9.5	49.0	4.2	
9.1	59.4	1.5	K
9.5	55 20.0	9.8	
9.3	29.7	25.8	
9.5	52.8	29.7	
9.5	56 27.7	16.2	
9.0	43.4	48.1	K
7.7	54.7	45.0	K
9.5	58.4	27.6	
9.2	59.5	32.5	
9.5	57 8.8	53.3	
9.1	58 48.9	0.7	K
9.3	59 29.1	18.6	
9.5	0 6.3	26.7	
8.0	7.4	19.3	L
8.8	17.8	36.3	
9.2	1 5.4	11.0	
9.3	35.8	36.3	
9.5	2 21.5	41.0	
9.0	45.2	7.7	
8.5	54.7	47.8	K
9.5	3 19.0	24.7	
9.5	47.4	16.8	
9.5	4 44.1	30.5	
9.5	5 21.9	15.9	
9.5	59.6	13.3	
9.5	6 2.4	2.9	
8.5	40.1	49.8	K
9.0	7 5.4	4.6	
8.0	50.4	19.7	K
9.5	53.1	24.1	K
9.0	54.1	43.2	
9.0	8 47.8	31.4	K
9.0	9 53.7	58.0	B
9.5	10 13.6	2.2	
9.5	16.0	9.1	
9.5	22.5	16.8	
9.0	43.3	54.8	K
8.9	11 30.4	26.6	
9.4	12 15.8	48.1	
9.4	36.1	16.5	B
9.1	40.8	32.9	aBb
9.5	43.1	47.1	
8.3	13 36.7	20.1	
9.3	37.6	33.5	
9.5	50.7	25.2	
9.5	14 29.1	15.8	
8.2	51.1	39.1	K
10pr.	+ 30.71	− 3.34	

2621—2680

	12ᵉ	+5°	
m	′ ″	′	
9.3	15 25.1	51.6	
9.0	55.4	29.4	a
8.0	17 7.1	7.5	Lb
8.3	15.1	50.9	K
8.7	53.1	47.7	K
8.7	18 6.8	41.5	K
9.5	17.1	51.6	
9.5	45.4	36.3	
9.5	19 54.8	48.4	
8.7	20 14.1	13.0	Kb
7.3	55.6	12.5	K
9.0	21 42.2	24.7	B
7.5	22 5.8	38.3	K
8.5	57.8	12.9	K
8.3	23 19.4	52.3	K
9.0	51.7	26.7	B
8.5	57.8	30.3	B
8.0	59.2	52.1	K
9.5	24 3.3	14.2	
9.5	26.3	2.0	
9.5	48.5	27.8	
9.5	25 42.2	20.2	R
8.0	26 14.7	1.8	K
9.4	44.9	46.1	b
9.5	27 28.8	48.4	
8.7	28 3.7	28.5	K
9.5	19.8	10.8	
9.5	29 4.2	0.6	
9.4	45.7	44.2	
9.5	48.8	40.5	
9.0	30 15.3	24.6	B
9.5	22.0	52.5	
8.0	25.8	46.9	K
7.3	28.5	4.7	K
9.2	34.2	40.6	
8.9	31 17.9	58.1	K
9.0	24.4	33.1	
9.5	46.1	2.5	
8.5	54.3	50.8	K
9.5	57.0	57.1	
9.0	32 6.4	41.8	Kb
9.5	35.7	15.6	
9.5	33 16.8	40.0	
9.5	22.8	41.1	
9.2	31.1	2.9	
9.0	32.3	14.3	
9.5	39.5	9.7	
9.2	56.7	34.0	b
7.8	34 54.1	5.3	B
9.5	35 6.3	30.6	
9.5	29.4	45.2	
9.5	36 12.3	52.1	
9.0	37 59.9	9.2	B
9.5	38 3.4	14.7	
9.5	37.7	5.5	
9.5	45.3	42.5	
9.5	39 38.8	37.3	b
9.5	55.9	37.3	
9.0	40 48.4	56.4	K
9.0	51.6	50.0	K
10pr.	+ 30.55	− 3.31	

2681—2740

	12ᵉ—13ᵉ	+5°	
m	′ ″	′	
9.3	41 56.3	0.3	
8.2	42 4.8	58.3	K
9.5	52.9	32.7	
9.5	43 13.2	7.2	B
9.4	35.4	56.7	
9.5	44 24.3	44.2	
9.2	35.4	35.1	b
9.5	45 29.7	11.5	
9.2	43.4	49.2	
7.8	46 19.5	1.3	K
9.4	23.3	31.9	
9.5	46.8	55.2	
9.5	47 59.6	21.6	
9.3	48 56.8	56.8	
9.0	49 7.3	23.0	K
9.5	22.4	49.0	
9.5	50 15.7	14.5	
9.5	59.8	7.5	
8.2	51 35.6	53.3	K
9.0	52 7.1	44.2	
9.5	53 36.9	36.8	
7.3	48.1	8.3	K
9.5	54.3	51.8	
9.5	54 4.1	50.8	
9.5	12.8	11.0	
9.5	41.4	39.0	
9.0	55 0.3	22.5	
var	17.6	57.9	K
8.8	56 7.1	40.8	K
8.6	45.2	58.0	K
9.5	57 24.3	31.0	
9.5	41.4	43.2	
9.5	58 19.3	34.7	
9.5	28.4	12.3	
9.5	56.4	18.2	
9.4	59 21.3	22.0	
9.3	51.9	22.0	
9.5	1 32.7	40.4	
9.5	2 6.1	28.7	
8.8	59.6	47.4	K
9.5	3 15.8	34.2	
9.5	4 9.4	30.7	
9.0	43.8	15.8	K
8.8	5 14.8	4.6	
8.7	43.4	54.4	K
9.5	6 4.9	24.8	
9.5	6.1	49.7	
7.5	7 44.8	16.8	K
9.5	8 2.6	23.4	
8.3	41.3	25.1	Kb
9.5	9 28.3	8.7	
7.7	34.6	55.3	K
9.5	11 33.8	21.6	
9.5	12 16.3	37.2	
9.0	42.8	2.0	
7.3	13 15.1	35.5	K
6.5	14 51.6	55.0	K
9.5	59.3	21.9	
9.5	16 3.1	20.8	
9.5	3.4	58.4	
10pr.	+ 30.41	− 3.24	

2741—2800

	13ᵉ	+5°	
m	′ ″	′	
9.5	16 24.3	39.6	b
7.7	17 22.9	9.7	B
9.5	18 9.1	57.4	
9.5	10.3	21.6	
9.5	19 32.6	53.5	
9.5	20 23.7	27.9	
9.5	42.1	8.6	
9.0	21 4.9	51.9	
8.5	42.1	13.3	K
9.5	42.8	42.8	
9.5	52.9	31.4	
9.5	23 19.2	7.1	
9.5	25.4	54.7	
9.2	39.3	56.1	K
9.0	43.8	12.6	
9.5	45.2	56.1	
8.7	24 4.5	2.3	K
9.5	16.4	24.0	
9.0	19.3	51.6	
9.5	25 6.9	40.7	
9.2	31.8	13.2	b
9.5	41.1	9.7	
9.0	26 4.6	48.7	
9.5	14.4	26.8	
9.3	38.9	53.1	
9.5	44.1	11.0	
9.0	27 1.3	24.8	
9.5	18.3	7.2	
8.0	27.1	38.7	B
8.9	32.3	53.6	
9.0	28 40.4	38.8	
9.5	29 10.3	34.2	
9.5	50.8	44.0	
8.4	57.3	9.2	K
9.2	31 5.8	24.7	K
9.4	13.9	5.0	
9.2	32 24.7	5.7	
9.2	43.1	47.1	
9.2	44.2	41.2	K
9.5	56.1	34.2	
9.4	34 2.5	19.5	
9.3	21.1	44.9	
8.2	28.1	32.0	K
8.5	31.5	24.7	K
9.5	54.7	57.7	
8.9	35 5.8	44.2	
9.5	22.9	52.8	
9.4	23.7	9.1	
9.5	26.8	25.4	
9.5	38.5	47.7	
9.5	36 57.4	37.2	
9.5	37 5.5	16.4	
9.5	38 33.8	33.4	
7.3	51.1	50.5	K
9.5	39 42.5	49.5	
9.3	44.3	2.7	b
9.5	48.1	19.5	
9.0	40 13.8	33.8	
9.5	32.8	6.9	
9.0	44.5	32.1	
10pr.	+ 30.24	− 3.10	

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	13ᵐ—14ᵐ		+5°			14ᵐ		+5°			14ᵐ—15ᵐ		+5°			15ᵐ		+5°			15ᵐ		+5°	
m		″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.3	42	1.5	16.1	K	9.5	8	30.4	2.3		8.8	39	51.7	4.9	K	8.0	6	21.6	35.8	K	9.2	28	12.7	29.5	b
9.5		27.9	10.2		9.0		51.3	50.0		9.4		53.1	45.3		9.5		57.1	48.4		9.5	29	6.2	29.9	
9.5		53.8	16.4		9.3	9	50.1	24.1		9.4	40	15.6	58.7	K	8.7	7	11.1	31.4	K	9.5		50.7	26.7	
9.5	43	41.4	54.0		8.7		55.1	27.2	Kb	9.5		20.0	4.2	B	9.0		45.0	14.0	B	9.3	30	0.6	54.7	
9.5	45	32.7	52.4		9.5	11	11.3	53.8		9.0		53.8	33.1	L	5.3	8	0.5	29.2	K	9.5		7.7	42.4	
9.5		37.8	4.3		9.5	12	42.2	51.1		9.5	41	21.8	27.9		9.5		18.3	47.2		9.5		23.5	10.2	
9.4		57.6	56.8		9.5	14	8.5	53.9		9.5		36.5	59.4		9.5		28.2	42.0		9.5		34.5	59.5	
9.3	46	4.5	25.0		9.5		54.6	5.1		8.9	42	13.6	10.9		9.2		41.2	41.5		8.3		49.6	34.5	K
9.5		8.2	15.3		9.5		54.8	15.7		9.0		24.5	19.1	L	8.9	9	1.8	26.9	K	8.4		50.2	30.6	K
8.9		11.4	36.9	K	8.7		58.4	52.4	K	9 5		37.0	52.2		9.5		35.7	49.6		9.5	31	1.1	29.5	
9.3		26.1	43.1	B	9.5	15	11.8	22.7	b	9.4		43.0	44.8		9.0	10	9.6	30.2	K	9.5	32	11.3	19.3	b
8.8		35.5	32.7	K	9.5		34.5	25.8		9.3	43	0.9	39.6	b	8.7	11	43.8	4.8	Kb	9.5		24.5	36.3	
9.5		57.5	16.4		9.5		34.5	47.0		9.5		25.9	31.1		8.7	14	5.2	54.2	K	9.2	33	15.3	18.5	b
8.8	48	5.1	40.3		9.5		57.8	9.3		9.4	44	11.7	12.3		8.8		9.2	29.2	K	8.6		52.4	59.2	K
8.0	49	3.6	59.3	K	9.5	16	9.1	31.0		9.3		40.3	11.1	K	9.3		27.0	19.7		9.3	34	13.8	43.5	
9.0	50	6.3	56.8	K	9.5		17.5	32.0		9.5		40.5	17.4		9.4		54.2	34.0		9.1		34.0	35.0	a
9.3		12.8	23.3		9.5		43.1	48.7		9.5	45	18.8	12.5		9.5	15	9.0	53.7		9.2		48.0	10.1	
9.5		28.0	10.2		9.3	17	34.4	38.0		9.0	46	19.4	3.9	K	9.0		11.5	11.8	K	9.3	35	8.1	11.0	
9.4		38.5	16.0		7.8	18	40.2	30.3	B	9.5		26.1	34.9		9.4		14.3	24.4		8.4		15.8	30.0	Kb
7.8		40.8	49.4	K	8.4	20	0.9	55.2	L	9.1	47	18.5	11.1	a	8.9		17.7	13.9	K	9.3		32.0	40.3	aB
					*																			
9.2		45.5	21.9	b	9.5		40.3	43.0		9.4		28.5	45.0	b	9.5		30.7	38.4		8.4		38.8	37.0	K
9.3		59.9	31.6		8.5	21	25.1	51.4	K	9.4	48	17.2	53.3	aB	9.5	16	8.8	51.7		9.5		50.8	32.8	
9.2	51	22.6	2.7	a	9.5		34.3	5.2		9.5	49	5.5	56.7		9.5	18	4.8	3.5		9.5		52.1	25.5	
9.4		26.5	49.0		9.5	22	7.6	0.6		9.5		25.9	4.4		9.5		37.1	5.2		9.5	36	10.3	54.5	
9.4	52	13.8	30.6		9.4	23	28.6	24.2		8.0		31.1	59.0	K	9.2		56.1	8.4	b	9.4		22.7	58.0	
8.9		33.2	37.2	K	6.3		30.6	25.0	Kb	9.0	50	16.5	45.3		8.8		58.7	39.4		9.3		23.8	41.7	
8.8		34.1	16.4		9.5		52.8	35.5		9.5		53.8	24.1		8.1	19	35.7	44.8	K	9.5		41.5	12.2	
8.7		46.2	4.2		9.5	25	21.3	1.4		9.5	51	6.5	50.0		9.5	20	23.0	23.1	S	8.5		56.6	9.6	K
8.7		49.5	24.6	K	7.2		49.9	58.2	Kb	9.5		6.9	9.1		9.2		28.5	53.5		9.1	37	13.6	3.8	K
8.8	53	2.5	33.7	K	8.6	26	28.2	8.3	L	9.5		8.8	20.8		9.3		37.7	58.0		9.0		30.2	30.5	
9.5	54	5.8	21.9		9.4	27	47.5	38.8		9.5		15.9	5.8		9.3	21	3.7	14.2		8.5	38	4.6	9.2	K
9.3		56.5	20.9		9.5		54.7	38.2		9.3		52.8	21.6		9.5		30.4	28.5		6.7		13.8	53.7	L
9.5	55	11.3	10.4		9.5		56.1	15.0		9.3		58.2	30.3		9.5		46.2	29.5		9.3		24.0	53.0	
9.5	56	11.1	34.8		9.5	28	11.5	49.5		6.2	52	9.1	9.0	Kb	9.4		50.3	17.3		9.5		33.0	36.1	
9.5		27.3	11.0		9.1		16.8	42.1	Kb	9.5		21.6	48.8		9.5	22	6.2	52.1		9.5		33.9	42.8	
6.5		40.5	35.5	L	9.5	29	12.8	24.0		9.5		22.8	23.7		9.3		20.2	9 3		9.5		36.9	50.8	
9.3		47.9	54.9	K	9.5		56.9	6.2		9.3		31.8	16.4		9.4		23.5	8.4		9.2		40.7	22.2	
8.8	57	27.1	27.5		9.1	30	57.3	57.1	K	9.1		44.7	0.0	K	9.5		33.1	32.5		9.0		41.4	46.9	L
9.5		51.3	6.2		8.6	31	10.1	30.3	K	9.5		49.5	8.1		9.4		33.4	8.8		9.2		42.7	50.5	
9.0		57.6	14.6	K	9.5		55.2	53.0		9.0		51.5	25.4		9.3		36.5	5.0		9.5		44.2	29.8	K
9.3	58	9.3	55.6		9.5	32	4.1	48.5		9.5	53	26.4	33.8		9.5		44.6	37.4		9.5	39	0.7	55.2	
9.3	59	9.5	47.3	b	9.2		44.8	14.8	b	7.5	56	7.5	24.0	K	9.0		48.7	25.5	B	9.5	40	26.4	59.0	
9.5		10.0	5.1		8.0		52.8	41.3	K	9.5		54.1	18.5		9.5	23	0.0	35.0		9.5		31.2	37.1	
9.5		12.0	54.0		9.5	33	17.7	53.0		9.5	58	1.8	0.1		9.5		3.0	35.3		9.5		32.6	4.2	
9.5	1	21.8	59.5		9.5	34	37.0	7.0		9.5		5.1	30.6		8.5		16.7	45.8	K	9.5		37.7	25.0	
9.0	2	2.1	20.6		9.4		45.7	37.5		9.5		5.7	6.9		9.3		22.1	3.9		9.3		45.2	57.3	
8.7		9.2	37.6	K	9.3		46.2	12.4		9.5		28.8	31.4		9.2		40.2	24.3	aB	9.4	41	36.7	17.0	
9.2		24.4	39.7	K	9.5		57.2	16.9		9.3		34.1	46.0	b	9.5	24	9.1	8.6		8.7		39.3	51.6	Kb
9.5		28.3	53.6		9.3	35	15.7	56.4	b	9.5		44.8	14.3		9.5		28.2	14.5		9.3	42	2.8	58.1	
9.3		58.8	46.3		8.9		17.7	17.2	K	9.5		58.7	10.2		9.5		49.7	51.0		8.6		11.4	29.8	K
9.5	3	12.5	40.0		9.5		22.1	38.5		9.5	59	0.1	24.4		9.3		52.3	0.5		9.5		23.5	6.5	
8.6		40.0	6.0	K	8.3		22.2	7.3	K	8.5		45.9	0.7	Kb	9.5	25	34.0	0.6		9.5		46.7	56.6	
9.5	4	12.1	51.9		9.5	36	5.0	9.7		9.5	0	20.6	3.5		9.0		46.4	59.9		9.5	43	49.0	51.6	
8.8		16.1	41.0	K	9.5		5.5	15.5	aB	9.5		40.4	13.1		9.4	26	10.2	24.0		9.4	44	34.5	11.4	
9.5	5	8.5	36.9		8.5	38	1.2	8.3	K	9.5	1	40.1	9.1		9.5		56 2	22.5		9.0		54.7	28.5	
9.3		25.7	50.8		8.7		29.7	9.4	K	9.0		50.6	17.4		9.3	27	5.4	15.2	K	9.0		57.5	55.6	
9.0		42.9	38.7		9.5		43 8	15.0		8.5		53.1	45.3	K	7.5		22.4	12.8	K	9.0	45	0.1	3.8	
9.5	6	31.4	31.7		8.8		56.2	49.0	L	9.5	5	18.4	55.0		9.3		27.1	9.7		9.5		7.2	43.8	
9.5	7	4.4	46.0		8.6	39	32.5	33.8	K	9.4		52.1	49.5		8.8		32.1	51.9	L	8.9		28.3	53.7	K
9.2		31.1	23.4	K	9.0		49.8	28.9	K	9.5	6	5.6	20.9		9.5	28	7.2	16.7		8.6		55.2	19.7	K
10 pr.		+ *30.11*	− *2.93*		*10 pr.*		+ *29.95*	− *2.68*		*10 pr.*		+ *29.85*	− *2.45*		*10 pr.*		+ *29.73*	− *2.14*		*10 pr.*		+ *29.67*	− *1.94*	

2880ᵃ			
var	*20*	*1*	*19.9*

3101—3160

	15ᵉ—16ᵉ	+5°	
m	′ ″	′	
9.4	46 3.2	29.5	
9.5	7.2	49.7	
9.2	38.4	4.6	R
9.5	47.6	52.4	
8.9	50.5	47.3	
9.3	54.7	0.0	R
9.2	47 6.5	54.4	
7.5	17.7	43.7	K
9.4	22.3	24.3	
9.2	27.8	8.4	
8.3	31.7	38.6	K
9.3	34.6	25.6	
8.7	57.0	31.0	K
9.0	59.7	28.4	K
9.3	48 11.7	41.7	
9.5	49 15.9	52.1	
7.3	51 18.3	10.2	K
9.5	52 11.7	47.1	
9.5	16.7	41.0	K
9.5	46.2	30.5	R
9.3	55.7	29.8	Rb
9.5	57.2	44.7	
8.7	53 22.1	9.0	K
8.8	38.9	2.1	K
9.5	55.7	36.7	
9.2	54 27.6	12.5	
9.5	55 8.2	47.5	
9.0	56 4.5	35.4	K
9.3	8.2	46.9	
8.7	15.7	27.8	K
6.5	37.2	23.2	Kb
9.5	57 0.7	44.7	
9.5	58 11.1	2.5	
9.1	31.7	34.8	K
9.5	48.7	58.3	
9.5	59 8.1	13.8	
8.0	16.7	48.9	K
9.5	40.7	46.5	
9.4	0 15.1	57.2	
9.2	18.5	26.3	b
9.5	32.1	57.6	
9.5	46.2	33.7	
9.1	1 6.7	51.7	a
9.5	16.1	6.2	
9.5	27.2	55.2	
8.8	28.4	12.5	
8.0	33.2	47.0	K
9.3	45.1	27.7	
9.5	59.3	57.9	
9.5	2 1.4	15.2	
9.0	3.3	36.0	K
8.9	28.5	38.7	K
9.3	29.5	59.9	
9.5	51.7	44.4	
9.5	3 45.4	13.0	
8.7	45.9	43.7	K
9.5	51.2	51.4	
9.0	4 35.7	17.1	K
9.5	5 8.1	7.0	
9.5	13.5	19.2	
10pr.	+ 29.61	— 1.72	

3161—3220

	16ᵉ	+5°	
m	′ ″	′	
9.5	5 17.1	55.1	
9.3	38.0	49.6	
9.2	46.4	14.3	
9.5	58.5	1.0	
5.8	6 4.9	23.9	Kb
9.5	5.5	6.8	
8.4	27.9	40.9	K
9.5	7 13.7	19.9	
8.5	21.8	54.3	
9.2	31.9	25.3	B
9.5	32.4	28.8	
9.5	8 11.1	4.6	
9.5	42.7	32.0	
9.5	53.2	34.3	aB
9.5	9 11.5	55.2	
9.5	33.4	41.0	
9.5	44.3	47.3	
9.5	10 45.7	24.4	b
9.2	11 55.6	44.8	K
7.8	12 18.6	54.0	Kb
9.4	13 11.7	39.3	
9.5	56.1	2.0	
8.7	14 2.5	22.0	
9.2	14.4	26.4	
9.5	30.3	21.7	
9.2	50.4	47.5	
9.3	15 3.1	52.1	
9.5	19.8	56.5	
9.5	16 48.2	45.1	
9.5	17 0.1	21.6	
9.5	7.7	17.4	
9.4	12.0	6.1	
8.5	19.2	52.0	K
9.2	19.6	1.5	
9.0	35.5	36.4	K
9.2	49.7	40.6	
9.2	18 4.4	47.2	aB
9.5	32.0	14.7	
9.5	35.3	39.6	aB
9.5	58.8	16.7	
9.3	19 7.2	56.9	
9.0	25.1	55.3	
8.2	30.4	40.0	B
9.4	43.6	57.9	aB
9.5	50.5	58.0	B
9.3	20 21.6	3.2	
9.3	22.3	7.1	
9.4	39.7	31.9	
9.5	44.8	32.4	
9.3	21 10.5	32.0	
9.2	28.1	55.7	
8.7	38.1	24.7	K
8.5	40.9	7.3	K
8.7	22 5.0	21.3	K
9.5	29.1	55.9	
9.3	23 0.5	9.3	
9.2	9.6	45.9	aB
9.5	15.9	44.7	B
9.5	33.9	54.1	
9.5	50.3	51.4	
10pr.	+ 29.56	— 1.45	

3221—3280

	16ᵉ	+5°	
m	′ ″	′	
7.7	24 30.9	45.0	K
9.5	40.6	15.8	aB
5.9	25 27.7	49.8	Kb
9.5	26 16.5	57.6	
9.5	45.0	30.7	
9.5	27 4.6	13.6	
8.8	49.0	27.3	
9.5	28 0.5	42.0	
8.5	4.2	49.0	L
9.0	14.0	31.0	
8.5	42.7	58.1	K
9.5	29 7.9	2.4	
9.5	22.0	51.5	
8.7	33.0	19.0	K
9.0	35.8	36.2	K
9.5	43.5	51.1	
9.0	30 7.5	37.9	K
9.3	16.3	3.9	
9.2	16.7	23.8	K
6.8	25.3	35.2	K
8.5	30.0	17.2	K
9.5	31 0.8	26.9	
9.2	15.0	30.0	
8.7	53.5	19.6	K
9.3	32 22.0	2.1	
8.7	41.7	47.6	K
9.4	55.7	24.6	aB
9.1	33 2.2	4.9	a
9.2	3.9	34.3	aB
9.5	13.5	17.9	
9.5	28.0	14.5	
9.5	52.0	48.3	
9.5	34 4.5	23.1	
7.2	21.3	9.0	Kb
9.5	35 14.4	2.8	
9.5	16.2	33.0	
9.5	18.8	52.2	
9.0	40.0	21.0	K
9.3	57.7	57.0	K
9.5	36 29.5	46.6	
9.5	30.8	59.3	
9.0	37 32.5	28.3	
8.5	32.9	11.1	
9.3	35.9	0.9	
9.5	38 17.2	53.5	
9.0	39 10.5	9.1	Kb
9.4	24.8	59.0	K
9.5	30.0	35.5	
9.5	53.1	1.7	
9.5	40 9.0	6.1	
9.3	30.7	58.2	
5.3	38.5	30.4	Lb
9.4	41 0.0	15.8	
9.5	40.7	17.0	
9.5	58.0	51.7	
8.2	42 22.3	37.7	K
9.2	33.8	23.6	
9.5	44.1	43.9	
9.3	50.8	28.0	
9.5	43 18.2	56.2	
10pr.	+ 29.52	— 1.23	

3281—3340

	16ᵉ—17ᵉ	+5°	
m	′ ″	′	
9.1	43 25.9	22.5	K
7.8	51.9	43.9	L
8.5	53.3	1.5	Kb
8.4	45 11.7	3.3	K
9.2	28.5	10.3	
9.5	46 1.6	21.4	
9.2	52.3	7.0	b
9.5	47 16.1	23.2	
9.5	23.1	30.8	
9.3	48 4.3	14.6	
9.2	28.3	51.7	
9.4	49 35.4	9.8	
8.7	50 11.6	13.5	B
9.2	24.4	39.3	aB
9.5	28.7	4.4	
9.5	51 4.6	23.6	
9.5	33.5	3.5	
9.5	53.6	6.5	R
9.5	52 27.5	4.8	
9.5	32.6	41.9	
9.1	53 6.6	52.6	a
9.4	15.1	14.9	
9.5	24.0	50.5	
9.5	54 8.8	2.8	
9.5	14.1	47.1	
8.8	35.9	7.0	K
9.2	45.3	13.8	K
9.5	55 5.1	6.6	
9.5	8.7	56.8	aB
9.5	48.7	55.4	
9.5	56 15.6	19.7	
9.4	39.6	4.0	
9.4	57 21.1	31.2	
9.5	27.0	6.2	aB
8.5	35.6	29.0	K
9.2	36.6	37.8	
9.5	58 3.2	36.7	
8.7	3.8	25.0	K
9.5	7.6	7.5	
9.4	32.3	59.1	
9.5	42.6	33.9	
8.0	47.9	13.4	K
8.0	59 3.4	22.8	Kb
9.5	23.1	9.7	
9.2	34.1	35.0	K
9.5	42.6	32.1	
9.5	57.0	56.1	B
9.3	0 2.1	6.1	aB
8.8	7.1	34.9	K
9.3	38.5	53.8	
9.0	42.6	14.6	L
9.5	1 10.3	22.6	
8.0	13.8	36.0	K
9.2	15.4	35.7	aB
9.2	20.4	34.5	aB
8.3	45.8	54.2	K
9.5	2 43.5	58.6	aB
8.5	55.5	5.8	Kb
8.0	3 0.1	33.9	K
8.8	33.8	34.2	K
10pr.	+ 29.49	— 0.92	

3341—3400

	17ᵉ	+5°	
m	′ ″	′	
9.5	3 42.6	58.0	
9.5	4 30.1	57.7	
9.3	57.1	20.1	
9.5	5 16.2	59.5	
9.5	23.1	18.5	
9.3	23.8	25.0	
8.8	28.0	5.0	K
9.2	30.5	8.5	
9.5	41.1	48.1	
9.0	45.9	43.9	
8.7	6 11.1	14.9	
8.7	37.1	58.4	K
8.1	49.3	6.4	Kb
9.0	7 52.1	22.5	
9.2	8 3.8	57.9	K
9.5	11.8	0.5	
9.5	29.0	57.6	
9.5	9 6.7	54.0	
9.3	20.4	6.4	
8.0	21.6	17.7	Kb
9.5	48.3	24.2	
8.6	10 3.7	9.6	K
9.3	8.6	10.8	K
9.1	39.3	32.2	ab
9.5	11 1.2	26.7	aB
9.2	5.9	8.0	
8.5	14.1	0.4	K
9.5	41.1	20.5	
9.5	12 3.1	48.1	
8.2	56.3	40.5	B
9.5	57.4	16.5	
8.2	13 4.6	4.7	B
9.5	48.0	23.9	aB
9.3	49.1	40.5	
9.5	14 41.1	48.8	
9.5	47.1	18.4	
9.3	52.6	42.2	
6.8	56.6	9.8	K
8.1	15 1.1	21.1	L
9.3	10.7	59.2	a
9.5	18.3	31.9	
9.0	21.3	55.2	
8.8	16 16.1	11.7	
9.0	53.1	36.6	K
9.5	17 9.6	31.2	
9.4	14.0	55.2	
8.7	36.6	20.4	K
9.5	47.4	58.5	
9.2	18 4.1	24.6	
9.3	9.2	12.8	K
9.5	19 15.9	2.5	
8.5	20.5	46.4	K
9.5	31.3	39.5	
9.5	31.8	41.9	
9.5	59.3	6.9	a
9.2	20 12.6	27.3	b
9.5	15.6	13.0	
9.5	17.5	59.5	
9.0	27.9	8.1	
9.5	32.9	55.3	
10pr.	+ 29.46	— 0.68	

3401—3460

17ᵐ +5°

m	′	″	′	
9.3	21	18.0	38.0	
9.5		42.2	57.6	
9.5		57.9	59.6	
9.3	22	18.9	16.8	
9.1		31.0	46.0	K
9.5		36.6	24.4	
8.9		41.3	38.0	K
9.0		56.5	4.3	
9.2	23	16.2	40.4	K
9.5		52.1	5.6	
9.5	24	41.5	56.7	
9.0		51.3	24.1	
9.4		53.4	41.7	B
8.8	25	20.3	50.2	aK
9.5		33.9	29.7	
9.5		56.6	35.6	
9.3	26	9.6	7.7	aB
9.5		14.3	33.5	
8.2		16.6	48.4	K
9.1		30.8	2.6	aBb
9.5		54.9	48.4	
9.5		57.2	9.2	B
9.4		57.7	16.4	aB
9.3	27	1.6	30.3	
9.5		24.3	57.3	
9.0	28	9.7	59.9	K
9.2		17.6	45.9	
8.2		24.1	6.9	K
9.2		42.6	37.0	a
9.0		47.6	47.4	
9.5		50.3	21.4	
9.5	29	6.7	40.6	aB
9.4		7.3	1.2	aB
9.1		33.4	54.0	a
9.5		51.6	56.1	
9.5		55.9	29.0	
9.5	30	0.2	13.0	
9.5		1.6	17.2	
9.5		18.0	9.0	
9.2		48.3	48.1	b
9.5		53.9	30.0	
8.2	31	16.2	13.0	B
*8.3		21.3	6.6	B
9.5	32	16.5	50.4	
9.5	33	5.3	22.0	
9.3		35.8	39.7	aB
8.5		38.5	6.5	
8.7		52.1	59.6	
8.9		53.6	45.7	
8.5	34	17.0	35.0	
9.5		23.7	12.7	
9.2		32.8	35.1	
9.4		41.6	34.5	
9.2	35	6.1	0.3	
9.4		26.5	25.5	aB
9.5		28.2	43.3	
9.0		34.5	24.2	
9.5		36.8	27.8	aB
9.2		57.9	9.9	
9.5	36	17.0	1.2	aB
		+	−	
10pr.		29.46	0.45	

3461—3520

17ᵐ +5°

m	′	″	′	
9.3	36	18.5	7.2	
9.5		23.9	51.1	
9.5		31.5	22.5	
9.3		34.0	26.7	
8.6		43.1	29.5	K
8.0		46.0	54.9	K
9.0		47.6	37.8	K
8.1		49.1	31.6	K
8.1	37	5.0	18.6	L
9.5		6.9	34.7	
8.2		10.4	47.1	K
9.3		39.0	16.0	
9.0		54.9	35.3	
9.4		55.0	55.5	
9.5	38	3.1	2.5	
9.0		10.5	44.1	K
9.5		15.2	37.7	
7.8		27.9	46.6	K
8.8		28.7	29.6	
9.3		32.0	15.7	
7.3		49.6	58.3	L
7.8		51.4	45.2	K
7.5	39	0.7	35.5	K
7.7		4.0	43.1	K
9.5		13.2	59.9	
9.4		15.8	51.9	
8.7		20.5	46.1	S
8.2		20.5	27.5	B
9.4		26.1	21.3	aB
7.1		35.5	49.8	K
8.3		39.8	37.2	P
9.5		40.4	15.8	
8.9		51.7	29.5	
8.4		56.0	45.3	K
9.4	40	0.6	15.7	
9.4		1.3	34.1	
9.2		14.5	48.6	
8.5		22.5	39.3	K
9.3		31.2	9.7	
8.7		41.0	25.0	R
9.5		54.2	4.7	
9.5	41	8.8	32.7	
9.0		15.2	21.7	
8.2		37.9	44.9	K
7.9		49.3	1.3	Kb
9.5	42	1.0	16.8	
9.5		9.8	47.2	
9.5		14.0	0.3	
9.5		14.2	23.2	
9.1		16.2	37.8	a
8.9		19.2	24.2	R
8.7		25.0	26.1	R
9.0		25.9	52.1	
9.3		28.7	59.2	
9.5		37.8	54.8	
9.4		46.0	24.1	
9.1		54.2	22.7	K
9.4		57.3	44.0	
9.5	43	10.4	58.5	
9.0		54.8	57.4	
		+	−	
10pr.		29.44	0.30	

3521—3580

17ᵐ +5°

m	′	″	′	
6.8	43	58.2	16.6	K
9.5	44	2.4	59.4	
9.2		9.7	36.7	b
9.3		21.1	16.6	K
9.5		49.5	57.6	
9.2	45	27.7	30.5	
9.3		30.9	13.4	
9.4	46	2.6	26.2	aB
9.1		6.5	1.7	aB
9.0		10.9	25.5	
9.2		26.2	18.6	S
8.6		29.6	15.3	
9.0		36.5	24.9	
9.5		37.7	1.7	aB
9.0	47	8.0	44.1	
9.5		14.5	51.2	
9.0		23.8	14.9	L
9.5		45.5	35.0	aB
9.5		47.5	32.0	
9.2		53.6	22.7	
9.0	48	11.6	1.8	K
7.0		13.5	44.0	Kb
9.5		22.5	58.3	
8.0		56.0	12.1	K
9.5	49	21.0	17.5	
9.3		21.8	4.5	aB
8.0		44.3	0.8	Kb
9.5		49.6	54.7	
9.4		57.0	27.5	aB
9.5	50	19.5	54.8	
9.5		36.0	44.7	
9.0		57.2	10.8	K
9.0	51	8.2	58.1	K
9.4		10.5	53.7	
9.5		12.0	18.9	
9.5		18.0	39.7	
9.5		27.8	0.7	
9.3		29.9	54.4	aB
9.5		32.5	24.1	
9.5		48.3	23.5	
9.5	52	4.0	33.5	
8.6		35.7	43.5	
9.3		48.7	46.7	
9.3		56.1	58.5	
9.5		56.8	43.4	aB
9.4		59.9	37.6	aB
9.3	53	1.9	34.7	
8.8		3.2	33.3	B
9.5		48.0	50.9	
9.4	54	2.5	33.9	
9.5		5.8	57.2	
9.0		21.6	35.3	B
9.3		24.1	56.9	
8.6		34.5	40.1	K
9.2		35.0	32.5	
9.4		38.5	19.6	
9.3		41.7	35.5	aB
9.5		53.5	52.3	
9.1		58.5	23.5	aB
9.5		59.8	54.8	
		+	−	
10pr.		29.43	0.14	

3581—3640

17ᵐ—18ᵐ +5°

m	′	″	′	
9.3	55	0.8	47.5	
9.5		15.7	16.4	aB
9.5		21.5	36.6	
9.5		51.0	32.0	B
9.5		54.0	50.2	
9.5	56	1.0	25.1	
9.2		25.5	26.8	K
9.5		34.0	26.5	
9.4		38.8	16.3	
9.2		43.6	4.1	
9.5	57	6.8	39.9	
9.3		12.9	2.9	
9.5		22.4	8.4	
9.5		24.7	8.0	
9.4		28.5	2.9	
9.1		44.0	15.8	ab
9.5		47.0	23.0	
9.0		57.1	50.4	L
8.5	58	3.4	47.9	L
9.5		8.5	3.5	
9.2		57.8	3.4	
9.5	59	26.0	34.5	
9.5		30.5	56.9	
9.5		35.1	56.3	
9.3		48.3	27.6	aB
9.5		51.1	37.2	
9.4		55.1	32.9	aB
9.5	0	17.8	52.0	
9.5		24.0	17.1	
9.5		42.3	54.6	
9.1		59.6	7.8	a
9.5	1	7.8	23.7	
9.2		8.1	17.3	
9.5		16.0	54.6	
8.9		28.8	15.4	K
9.5		45.0	54.7	
9.4		55.2	43.8	
9.5	2	27.2	25.5	
9.1		51.7	56.9	a
8.8		56.6	30.7	K
9.5	3	8.2	18.0	
9.2		8.5	9.7	
9.5		16.8	41.1	
9.5		34.4	8.0	
9.0		37.5	57.3	K
9.5		48.6	36.3	
9.0		51.6	58.6	K
9.4		55.4	45.3	
9.4		58.6	47.8	
8.4	4	2.3	37.7	Kb
9.5		7.1	57.3	
9.5		13.5	52.6	
9.5		24.8	23.8	
8.2		36.6	26.2	K
9.2		43.1	45.0	
9.5		58.0	43.0	
9.5	5	5.1	50.2	
9.0		11.7	31.5	
9.5		19.1	17.2	
9.5		19.1	24.0	
		+	+	
10pr.		29.43	0.01	

3641—3700

18ᵐ +5°

m	′	″	′	
9.1	5	25.1	26.1	aB
9.5		39.5	33.2	
8.1		42.7	47.6	K
9.5		48.6	37.3	
9.5		50.0	29.9	
9.5	6	19.3	31.3	
9.5		19.6	28.1	
9.5		25.0	44.7	
9.5		27.0	53.0	
9.4		31.7	31.8	
9.5		40.4	8.0	
9.5		52.9	15.2	
9.3	7	0.1	19.0	
9.5		3.6	40.0	
9.4		4.7	42.7	
8.5		20.8	52.1	K
9.1		27.0	53.9	K
9.5		58.9	24.9	
9.5	8	0.9	53.8	
9.5		8.7	41.6	
9.2		17.7	56.6	
9.5		31.1	20.6	
9.2		45.5	40.6	b
9.5		45.8	7.0	
9.2		50.3	53.0	
9.5	9	9.3	25.2	
9.4		19.2	25.8	
9.5		25.6	39.8	
9.5		29.6	56.1	
9.4		33.5	9.3	
9.4		38.2	41.2	
8.6		58.3	51.7	K
8.0	10	9.1	42.2	K
8.9		18.5	7.1	
9.0		29.8	31.5	Kb
9.4		32.7	56.3	
9.5		36.0	27.2	
9.5		45.0	53.4	
9.2		46.2	37.2	K
9.5		52.2	3.9	
9.5		58.1	56.6	
9.5	11	2.7	52.9	
9.5		15.2	32.7	
9.4		17.5	40.9	
8.0		20 4	4.9	K
9.5		40.4	30.0	
8.6		41.5	58.3	K
9.3		56.7	22.9	
9.5	12	20.0	55.6	
8.8		22.2	18.6	K
9.4		35.5	47.6	
9.4		40.7	45.7	
9.3	13	7.1	48.5	
9.5		19.8	3.3	
9.5		20.5	14.3	
9.4		25.0	41.2	
9.5		29.9	5.5	
9.5		33.3	26.1	
9.5		37.5	38.4	
9.1		42.3	52.5	a
		+	+	
10pr.		29.43	0.14	

3445ᵐ				
9.6	31	58.2	6.1	B

m	18ʰ	+5°	
3701—3760			
9.5	13′ 47.0	0.1	
8.7	50.4	51.9	B
9.5	14 8.0	45.0	
6.9	21.9	22.5	Lb
9.4	36.1	16.6	
9.4	36.5	20.2	
9.5	37.1	52.9	
9.5	39.9	55.3	
9.2	44.0	50.2	
9.4	46.4	37.9	
9.5	15 12.5	52.2	
9.5	16.6	26.7	
9.5	33.5	43.7	
9.5	41.9	9.1	
9.5	42.4	16.0	
9.5	48.1	18.5	
9.5	48.5	14.1	
9.5	16 1.0	18.7	
9.5	20.3	51.4	
8.1	26.1	16.1	Lb
9.4	26.7	20.7	
9.3	34.3	35.8	
9.4	38.2	33.0	
9.4	49.9	1.4	
9.4	17 9.2	5.5	
9.5	33.4	58.3	
8.8	34.5	47.1	K
9.2	54.6	39.2	
8.9	18 0.3	55.5	
7.0	0.8	0.8	L
9.1	15.4	18.8	K
9.2	48.9	36.1	K
9.5	53.7	58.9	
9.5	19 0.1	16.5	
9.2	7.9	54.8	
9.5	9.4	48.8	
8.9	18.1	14.3	
9.5	22.5	9.8	
9.5	43.9	5.5	
9.5	48.4	5.1	
9.5	51.4	2.4	
9.3	55.2	48.7	
9.4	58.5	52.5	
8.6	20 3.6	59.3	
9.0	3.7	18.9	
9.5	9.8	50.1	
9.5	10.5	5.6	
9.3	20.4	51.1	
9.5	22.9	25.7	
9.0	46.1	16.7	
9.5	47.1	17.5	
8.1	56.9	40.5	B
8.9	21 3.2	55.5	
9.5	5.0	23.6	
9.4	11.8	31.5	
8.4	13.4	1.6	B
9.1	14.1	8.1	
9.5	33.0	56.7	
9.4	45.9	8.5	
9.5	22 9.8	33.8	
10pr.	+ *29.44*	+ *0.26*	

m	18ʰ	+5°	
3761—3820			
9.4	22′ 11.0	21.8	
9.0	15.5	38.7	
9.5	22.1	30.9	
9.4	24.7	18.7	
9.5	24.8	10.3	
9.5	47.3	40.5	
9.5	23 0.5	36.6	
9.3	38.7	32.8	
9.2	39.4	25.1	
9.5	42.2	59.0	
9.2	46.5	23.3	
7.8	55.1	39.3	L
9.3	55.6	33.6	
9.3	24 26.5	2.7	
9.2	33.6	50.0	
9.2	25 4.0	2.8	b
9.5	17.3	27.9	
9.5	24.1	33.0	
9.3	35.3	29 6	
9.5	45.0	19.3	
9.5	46.2	20.9	
9.2	47.0	32.8	
9.5	57.1	32.7	
8.1	26 10.4	20.7	B
9.5	25.0	57.0	a
8.2	29.8	30.2	B
9.5	30.3	35.2	
9.5	41.0	55.9	aB
9.5	42.8	7.6	
8.5	50.9	32.8	
9.5	51.0	56.5	
9.5	53.6	9.9	
9.5	57.8	22.6	
9.5	58.0	8.7	
9.5	27 12.0	30.0	
9.4	18.8	2.4	
8.7	39.0	21.5	K
9.3	46.2	49.6	aB
9.5	51.1	22.2	
9.5	28 5.1	1.1	
9.1	8.6	53.2	a
9.4	16.3	10.8	
8.1	25.9	39.3	K
8.9	29.1	1.4	
9.3	38.8	13.6	
9.5	40.0	49.0	
9.5	41.5	31.6	
9.1	50.8	18.1	a
9.5	51.2	40.2	
9.3	52.1	39.2	
9.5	54.4	4.1	
9.4	55.8	38.4	
9.5	57.3	49.7	
8 9	29 7.0	49.4	
9.1	11.0	8.8	a
8.0	21.9	10.5	K
9.4	23.8	37.7	
9.0	25.7	5.4	K
9.3	29.0	26.0	
8.8	29.5	1.6	
10pr.	+ *29.44*	+ *0.39*	

m	18ʰ	+5°	
3821—3880			
8.0	29′ 37.9	55.7	B
9.5	38.3	5.7	
9.5	42.0	11.4	
9.4	45.1	51.0	
9.5	46.8	28.5	
9.4	50.5	45.3	
9.5	51.5	45.0	
9.5	54.2	54.5	
9.4	57.1	10.9	
9.1	30 7.3	11.8	K
7.5	8.1	41.1	B
9.5	14.4	27.7	
9.2	14.6	46.5	aB
9.1	17.7	34.0	a
9.3	21.8	5.1	
9.4	24.0	0.7	
8.9	24.8	10.2	
9.1	25.2	54.2	a
9.3	27.4	21.1	
8.4	27.8	8.3	K
9.0	28.5	34.9	
9.5	29.0	2.6	
9.0	32.2	24.8	
9.4	33.1	22.4	
9.4	40.4	12.1	
6.8	42.4	45.8	B
9.4	42.9	22.9	
9.4	51.8	7.3	
9.4	52.3	28.0	
9.0	56.7	17.4	K
9.0	31 1.0	25.2	
9.0	1.1	13.6	
9.3	1.3	14.4	a
9.4	4.7	14.2	
9.5	4.8	50.1	
9.3	9.3	32.1	
9.3	11.1	30.8	
9.0	13.4	18.8	K
9.5	15.3	28.0	
9.3	19.2	2.0	
9.3	19.7	46.2	
9.2	23.6	51.5	
9.5	29.9	27.8	
6.7	30.0	20.7	K
9.5	33.6	41.2	
9.5	33.7	33.9	
9.5	34.2	35.0	
9.4	37.0	6.8	
9.4	37.0	10.4	
9.5	38.9	20.0	
9.5	39.0	12.9	
9.4	42.3	25.8	
9.3	45.7	12.6	
9.4	46.2	32.3	
9.5	50.5	22.4	
9.5	51.6	55.5	
9.2	54.1	23.8	
9.1	55.7	20.2	K
9.1	57.4	27.9	a
9.5	57.5	3.3	
10pr.	+ *29.45*	+ *0.45*	

m	18ʰ	+5°	
3881—3940			
9.5	32′ 5.3	36.2	
9.3	9.7	6.4	
9.3	13.0	19.9	
9.4	13.5	32.0	
9.3	14.8	23.0	
9.5	18.3	13.2	
9.0	19.5	59.5	
9.3	20.0	15.0	
9.4	23.5	20.9	
9.4	24.5	23.8	
6.7	29.0	8.1	K
9.4	35.5	10.4	
9.4	36.8	25.2	
9.2	37.4	4.9	
9.4	42.2	28.1	
9.5	45.3	26.8	
9.5	47.0	45.4	
9.5	48.9	53.2	
9.5	55 4	42.5	
9.4	33 0.0	15.0	
9.3	3.0	42.0	
9.4	4.8	10.1	
9.3	5.3	21.6	
9.4	7.1	19.6	
9.1	8.7	31.8	a
9.3	9.9	11.0	
9.0	17.7	54.1	
9.5	32.5	53.7	
9.4	34.3	35.2	
9.4	49.2	14.6	
9.4	51.9	25.4	
9.5	54.1	53.4	
9.5	34 2.3	21.4	
9.5	7.0	58.5	
9.3	10.1	42.0	
9.2	13.8	6.5	b
9.5	16.9	23.7	
9.2	39.5	52.9	
9.3	39.6	46.4	
8.7	56.4	48.6	K
9.5	35 2.0	34.5	
9.4	5.5	28.9	
9.5	11.2	20.5	
9.3	22.3	9.1	
9.3	33.8	0.3	
7.7	39.6	32.8	K
8.6	46.7	35.8	K
9.2	51.4	38.8	
9.0	55.5	22.0	K
8.9	57.0	5.1	
9.5	36 13.2	47.0	
9.5	23.3	55.0	
8.2	35.2	30.5	K
8.2	38.4	35.2	K
9.5	37 20.2	10.6	
9.5	23.9	35.7	
9.5	24.9	54.7	
9.5	33.0	14.4	
9.5	38.8	48.0	
9.4	56.3	20.8	
10pr.	+ *29.45*	+ *0.49*	

m	18ʰ	+5°	
3941—4000			
6.3	38′ 20.7	21.3	L
9.0	26.0	25.6	K
9.4	31.1	10.8	
9.5	46.6	41.4	
9.3	46.9	23.2	
9.4	39 0.8	19.3	
9.5	6.4	56.5	
8.0	11.0	0.0	K
9.5	41.2	42.1	
9.5	40 12.4	18.5	
9.4	39.2	56.7	
9.5	56.4	8.1	
9.5	41 33.1	20.9	
9.5	43.3	31.7	
9.2	56.7	20.7	aK
9.5	42 1.4	5.9	
9.4	22.4	10.8	
8.7	24.1	32.3	
9.3	43 9.6	54.1	
9.5	17.6	18.5	
9.5	35.8	30.8	
9.2	38.3	25.9	aK
9.5	41.5	19.8	
9.5	45.8	30.6	
9.5	47.8	16.8	
9.5	44 7.1	46.9	
9.4	47.0	20.7	
9.0	55.2	24.4	K
9.3	45 4.8	46.5	
9.3	14.9	47.8	
9.4	32.7	40.8	aB
9.5	47.9	48.9	
8.6	46 18.2	47.7	
9.5	25.1	55.0	
8.8	33.0	17.3	
8.8	36.6	35.8	
9.5	49.5	57.4	
8.8	52.8	50.0	Kb
9.3	47 20.7	48.6	
9.0	20.8	45.3	K
9.3	48 10.2	13.1	
9.5	43.7	57.2	
9.5	43.8	25.8	
9.2	49 22.5	14.7	
9.5	38.3	23.3	
9.3	50 5.4	15.8	
8.4	6.5	50.0	L
9.4	29.7	44.0	
9.1	38.3	45.1	B
9.4	45.5	34.1	
9.1	47.6	55.2	K
9.5	52.4	8.9	
9.3	55.8	45.9	
9.3	57.6	48 0	
9.5	51 16.1	6.1	
8.8	17.3	33.1	
9.4	39.9	1.7	
8.6	42.4	55.8	K
9.5	49.6	28.3	
9.5	55.7	20.4	
10pr.	+ *29.46*	+ *0.65*	

4001—4060					4061—4120					4121—4180					4181—4240					4241—4300				
	18h—19h		+5°			19h		+5°			19h		+5°			19h		+5°			19h		+5°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	51	57.2	15.8	a		9.5	4	42.9	16.5		9.5	14	45.8	29.5		8.8	25	42.8	42.8		9.3	34	13.2	0.7	
8.7	52	17.1	3.2	K		9.4		52.1	52.5		9.5	15	5.5	33.7		8.8		42.9	58.2		8.8		19.1	6.7	K
9.3		18.9	31.0			9.5		56.7	59.8	B	9.5		10.4	16.3		9.5		49.6	14.7		*9.3		21.2	57.0	
9.4		27.2	36.5			9.5	5	7.0	6.2		9.5		32.8	54.0		8.7		50.8	27.1	L	*9.5		48.4	3.5	
9.0		29.0	40.1	K		9.5		8.5	42.7		9.5		52.3	47.2		8.7		51.9	46.0		9.1		55.9	24.4	K
9.4		37.1	53.3			9.5		21.1	33.7		9.4	16	5.2	0.8		8.0	26	2.6	26.0	K	9.5		57.4	57.3	aB
7.5		46.3	57.5	K		9.2		25.7	55.2	K	9.5		17.4	42.0		9.5		8.7	0.8		9.2		58.5	33.0	
9.5	53	30.9	16.2			8.0		29.5	3.6	K	9.5		21.7	55.5		9.5		17.7	52.9		9.5		59.4	8.3	
9.3		47.0	27.7			7.3		30.6	47.9	K	8.9		25.0	6.3	K	9.5		35.4	19.1		9.4	35	3.1	51.5	
9.2		50.0	16.0			9.4		32.2	11.6		9.5		43.7	9.4		6.9		37.5	9.3	K	9.3		5.0	51.0	
9.5		52.2	16.2			9.5		32.2	13.6		9.5		47.5	5.4		9.1		45.3	27.6	a	9.4		8.0	52.6	
9.4		59.7	7.1			9.5		33.1	0.5		9.5	17	14.0	4.4		8.1		46.0	50.1	K	9.5		12.7	35.5	
8.6	54	26.8	1.4	K		9.5		37.2	10.6		7.4		14.8	17.3	K	9.5		47.2	40.0		9.5		15.7	10.1	
9.0	55	16.7	13.0	K		9.4		39.3	15.1		9.5		26.2	51.8		9.5	27	2.1	5.2		9.5		30.5	15.3	
9.5		41.3	29.0			9.5		46.3	33.0		9.0		27.4	7.2	K	9.5		23.8	57.8		9.5		31.9	49.6	
7.6		45.7	8.3	K		9.2	6	1.1	54.3		9.5		44.2	2.2		9.5		27.6	23.7		9.5		33.0	44.7	
9.2		59.6	25.9	b		9.5		6.5	49.4		9.4	18	0.8	6.0		9.4		36.2	45.9		9.2		36.2	10.4	K
9.2	56	6.8	44.2			9.4		8.2	12.9		9.4		2.6	2.7		8.2		38.0	54.6	K	9.1		42.7	3.6	K
7.9		18.9	47.1	B		9.3		23.7	32.4		9.5		10.7	15.1		8.7		49.1	55.5	K	9.5		42.9	17.1	
9.0		46.8	38.0	K		8.9		34.8	4.0	K	9.5		36.2	43.8		9.4		55.6	24.1		8.7		44.9	50.0	
8.3	57	0.0	1.8	K		6.0		36.2	16.3	K	9.4		51.1	41.5		8.8	28	3.4	27.6		*9.3		56.0	58.5	
9.4		17.9	30.6			9.5		47.3	40.2		9.5	19	0.0	21.7		9.4		15.9	31.5	aB	*9.2	36	6.8	36.2	b
9.5		30.6	51.6			9.4		57.6	1.5		9.5		5.9	5.1		8.9		21.0	0.3		9.3		7.7	49.1	
9.0		56.5	20.3			9.5	7	5.7	0.7		9.5		21.0	27.7		9.5		22.6	25.4		9.2		38.3	6.6	
8.8	58	13.3	40.5			9.5		7.2	27.8		9.5		24.0	21.4		9.5		37.5	47.9		9.5		40.4	23.3	
8.9		16.3	56.5	Kb		9.4		37.8	58.6		9.5		25.5	46.1		9.5		37.8	20.3	R	9.4		44.2	19.5	
9.5		53.1	27.7			7.0		37.9	48.2	B	9.5		48.1	56.2	B	9.5		38.1	52.6		9.2		48.2	56.4	
9.2		58.2	4.0			9.5		42.1	50.5		9.5	20	10.4	51.0		9.4		43.2	51.8		9.2	37	0.4	30.7	
9.5	59	19.0	57.6			9.5		45.1	47.0		8.3		32.8	44.2	K	7.0	29	5.5	41.7	S	9.5		2.2	7.9	
9.4		23.4	27.6			9.0		55.3	45.0	B	9.4		35.8	36.8	B	9.2		5.9	9.1		9.0		5.7	49.8	
9.5		26.4	6.2			9.5		59.0	33.1		8.1		35.8	54.1	K	9.5		13.9	59.2		9.5		12.9	17.7	
8.4		43.7	1.4	K		9.5	8	18.3	55.8		8.6		54.3	3.1	K	9.3		16.2	16.7		9.5		44.5	0.7	
9.4		47.2	1.4	a		9.4		21.5	1.4		9.5	21	4.3	6.3	a	9.5		51.5	30.4		9.5		51.8	5.6	
9.5	0	7.4	19.1			9.4		37.7	15.6		8.7		6.3	14.6	K	9.4	30	9.2	33.2		9.1		54.6	38.4	ab
6.9		20.5	56.4	K		9.5		43.8	58.2		9.5		11.9	1.0		8.6		16.4	8.0	Kb	9.5		54.8	51.0	
9.5		46.2	8.8			9.5		53.7	21.9		9.5		21.1	26.5		9.5		19.8	32.5		9.4		58.2	46.5	
9.3	1	9.5	12.4	aB		9.5	9	5.2	50.2		9.2		31.2	15.7		9.3		25.1	0.2		9.5	38	17.3	19.7	
9.5		37.3	17.3			9.4		15.1	27.4		9.2		31.4	8.6	K	9.5		31.5	40.0		9.3		24.2	30.9	
9.5		46.8	45.9			8.6		20.0	39.3	K	9.5		42.5	37.0		*9.5		32.4	54.9		9.5		31.3	47.5	
5.0		53.0	51.5	K		8.6		57.3	30.9	Kb	9.5	22	14.3	37.8		9.5		59.9	41.2		9.2		33.4	43.3	
9.5	2	0.1	15.6	aB		9.5	10	4.8	0.2		9.5		18.9	42.3		9.5	31	15.4	1.7	aB	9.5		39.5	11.7	
8.9		0.9	16.2	B		9.5		35.3	16.9	aB	9.5		35.5	54.7		9.3		26.1	10.2	K	9.5		46.4	4.1	
8.9		3.0	8.5	K		9.5		37.6	59.7		9.4		37.9	51.7	aB	9.2		35.3	27.5		8.9		47.2	29.4	
9.5		4.3	8.1			9.4		42.1	0.2		9.5		53.3	54.8		9.5		54.9	55.5		9.3	39	3.2	54.1	
9.5		13.6	0.0	aB		9.5		47.6	29.1	aB	9.4	23	3.9	18.5		5.0	32	2.6	4.0	K	8.5		6.8	38.0	
8.5		13.8	52.2	K		9.3		59.2	23.1		9.2		21.0	29.0		9.5		6.8	39.8		9.3		8.7	41.9	
9.2		24.0	5.6	aB		9.5	11	5.5	53.1		9.5		31.8	0.3		9.5		19.9	10.6		9.1		9.0	20.0	a
8.7		29.9	19.9			9.5		6.2	46.5		9.0		36.6	37.2		8.8		22.6	22.4	K	9.1		30.8	4.5	a
8.2		38.2	26.9	B		9.5		11.8	44.3		9.5		58.8	3.7		9.1		32.2	25.5	K	8.9		48.6	17.2	
9.5		41.7	35.6			9.5		39.4	51.4		8.7	24	0.1	22.8	K	9.5		33.3	35.8		8.3		49.1	48.7	B
9.5	3	42.9	32.2			9.1	12	2.5	27.7		8.9		11.2	8.7		9.5		34.2	41.9		9.3		51.1	58.3	
8.9		46.1	50.8			9.5		13.8	19.6	a	9.5		11.2	0.0		9.4		41.0	42.7		8.5	40	16.0	7.1	K
9.0		46.1	1.1			9.4		43.2	54.1		9.5		13.0	35.1		9.5		54.4	17.3		9.5		18.6	24.6	
9.1		51.2	8.7			8.0		52.6	20.0	K	9.4		13.0	2.4		9.5	33	23.8	42.2		9.5		34.7	27.2	
9.5		55.8	48.6			7.2		53.1	19.5	K	8.8		28.1	21.8	K	8.5		25.9	7.2	K	6.8		37.5	25.8	Kb
7.4		57.1	2.4	K		9.5	13	53.5	50.4		9.4		29.1	39.6		8.8		42.2	46.8		9.2	41	29.2	12.6	
9.5	4	14.2	35.2			9.5		55.1	39.5		7.0		34.2	27.9	K	9.5		50.8	7.4		9.5		39.0	58.8	
8.6		16.1	26.9			8.6	14	9.2	9.3		8.7		51.1	6.0	B	8.9	34	3.6	30.3	K	8.7		42.9	46.2	K
9.5		32.9	3.6			9.5		17.4	57.5	aB	8.8		56.0	11.3		9.3		6.9	55.0		8.4		47.6	23.7	
8.2		41.5	8.3	K		9.5		45.6	23.2		9.5	25	22.3	21.5		9.5		12.2	27.6		9.5	42	16.0	15.1	
10pr.		+ 29.48	+ 0.86			10pr.		+ 29.50	+ 0.98		10pr.		+ 29.51	+ 1.15		10pr.		+ 29.53	+ 1.26		10pr.		+ 29.54	+ 1.37	

4218m			
9.5	30	31.5	27.9

4243m			
9.5	34	41.5	33.3

4261m			
8.9	35	56.6	46.1

4301—4360					4361—4420					4421—4480					4481—4540					4541—4600				
	19h		+5°			19h—20h		+5°			20h		+5°			20h		+5°			20h		+5°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
9.5		42 28.4	8.7		9.4		51 10.7	16.4	aB	9.5		1 18.2	26.7		9.5		13 14.8	36.6		9.4		25 45.5	56.0	
9.0		38.3	1.6		9.4		15.4	27.7		9.5		20.7	50.9		9.3		30.1	56.4	a	9.5		47.3	45.9	?
9.5		46 2	11.6		9.0		19.0	57.9		9.0		50.8	30.0	K	8.7	14	0.3	29.5	K	9.0		53.8	47.6	
9.5		50.5	27.6		9.5		31.7	53.1		9.0		53.1	8.6	K	8.8		6.4	21.1	Kb	9.3	26	5.1	38.3	
9.4		59.4	20.7		9.5	52	0.5	58.5		8.7	2	13.0	15.4	K	9.2		14.3	41.8		9.4		28.8	8.0	B
9.5	43	25.7	12.9		9.2		9.5	8.7		9.3		20.8	39.7		9.5		20.4	37.6		9.1		37.3	29.5	a
9.2		33.1	51.5		9.4		15.0	53.8		9.3		24.4	54.8		9.5		35.1	57.5	aB	9.5		38.5	2.1	
8.8	44	5.0	53.1		8.6		20.6	30.0		9.3		34.9	5.2	aB	9.5		35.7	53.3	aB	8.5		39.4	17.0	K
9.5		6.5	20.2		9.5		48.1	57.6		9.0		48.2	21.1		9.0		36.6	48.7		9.5	27	1.2	31.8	aB
8.0		11.6	21.8	B	9.5		50.4	37.6		9.4		49.7	8.2	aB	9.3	15	10.6	56.1	a	9.0		24.8	15.6	K
9.5		13.0	14.9		9.4	53	4.7	3.6	B	9.5		52.4	9.6	aB	9.1		12.9	53.0	a	9.3		42.0	35.5	aB
9.2		19.9	40.8		9.0		14.1	6.8	K	8.1	3	15.0	9.2	K	9.5		17.4	10.5		9.3		51.2	13.5	B
9.1		22.5	51.4	a	9.4		17.8	6.6		9.5		16.8	38.7		9.0		45.3	43.1		9.4		53.1	52.3	aB
9.5		41.6	14.9		9.0		20.6	4.6		9.5		27.7	25.4		8.9	16	8.3	6.5		9.1		58.8	5.7	aB
9.5		43.8	23.8		9.4		22.7	33.3		7.9	4	1.9	55.8	K	9.2		14.2	57.0	R	9.3		59.0	31.9	
9.5		46.2	58.9		9.3		26.4	22.4		9.5		2.5	50.0		9.5		18.1	7.6		8.7		59.2	38.2	B
9.3		50.3	51.2	B	9.2		27.1	9.0	aB	9.4		3.4	37.6		9.5		20.2	13.0		7.8	28	5.8	47.3	B
8.8	45	15.0	1.0		9.5		41.1	54.5		9.4		8.7	56.4	aB	9.4		29.2	15.5		9.0		7.7	14.2	Kb
9.5		25.8	56.1		9.3		58.4	8.9	aB	9.5		14.5	55.6	aB	9.3		30.3	13.8	aB	9.5		44.4	53.2	
9.3		30.5	47.6		9.3	54	0.5	16.3		9.4		17.3	33.9	aB	9.5		36.6	40.2		9.2		54.6	26.0	B
9.3		32.4	7.6	aB	7.8		6.3	15.1	Kb	7.8		18.5	39.5	K	9.5		36.8	50.9		9.3		54.8	55.8	aB
9.3		47.4	7.9	aB	9.3		6.6	1.4		9.3		43.8	26.7		9.5		57.5	18.9		9.5	29	11.9	26.2	
9.3		48.0	13.3		9.4		7.4	7.5	a	9.5	5	13.0	7.0		7.3	17	22.5	2.4	K	8.4		15.4	41.5	K
9.5		56.3	20.4		9.5		18.2	45.3		9.2		20.0	29.9		9.0		36.2	12.5		9.5		37.3	13.8	
8.5		56.7	16.1		9.5		36.5	32.2		9.0		35.0	19.5		8.9	18	17.5	9.7	B	9.5		51.2	46.8	aB
9.5	46	3.5	57.2	aB	8.5		44.3	29.8		8.9		50.4	7.5		9.0		46.4	35.6		9.0		52.4	46.2	K
8.8		32.4	22.1		9.4		48.4	15.3	B	9.5	6	5.6	37.9		9.0		46.4	12.8		9.0	30	17.3	29.0	
7.8		50.1	30.7	B	8.5		49.5	16.3	K	9.5		10.2	53.2		9.0		55.3	43.2		9.3		22.6	41.3	aB
9.3		50.4	56.3	aB	9.5	55	1.6	53.3		9.2		19.2	24.9		9.1	19	46.5	27.7	ab	8.8		25.4	43.2	K
8.5		54.0	56.2	K	9.3		6.2	1.8		9.5		22.2	5.7		9.5		57.0	13.8		9.0	31	29.1	8.3	K
8.6	47	0.8	3.3		9.4		16.1	15.2		9.5		56.7	13.5		9.5		57.7	57.1	B	8.5		51.9	13.1	K
9.3		4.8	50.7		9.5		35.3	40.2		9.3	7	2.8	36.3	b	9.3	20	7.8	43.5	B	9.5		53.0	2.4	
8.4		6.0	53.0	K	8.0		52.8	20.6	K	9.3		4.6	42.1		9.5		13.6	24.0		9.3	32	28.6	27.6	aB
8.3		38.4	19.7	K	9.5		54.4	38.2	aB	9.2		8.8	37.2		9.5		13.8	10.4		9.4		35.6	30.2	
9.3		40.3	33.1		9.5		59.0	49.0		9.5		16.3	23.7		9.3		58.0	22.6	aB	9.5		42.6	8.8	
9.2		45.6	26.2		9.5		59.3	24.6		9.5		29.0	28.7		9.0		59.9	50.1		9.5		43.1	49.0	
9.5		47.2	41.1		9.4	56	11.7	6.8		9.0		37.0	27.3	K	9.4	21	0.5	26.3		9.5		56.0	13.0	aB
9.4		54.1	42.0		9.0		44.5	43.0		9.2		38.9	6.4	aB	9.5		9.4	11.7		9.2	33	6.5	54.5	
9.5		59.3	35.3		9.3	57	0.7	46.0		9.5		58.4	37.3		9.4		20.0	25.8		9.0		13.4	52.8	
9.5	48	2.4	36.6		9.3		0.8	57.8		9.5	8	22.7	48.8		8.6		36.9	54.0		9.5		21.6	31.9	
9.5		14.8	27.9		9.4		9.6	54.0		9.0		30.2	49.4		9.0	22	8.8	10.4		9.3		31.3	43.0	
9.4		15.7	18.4	aB	9.4		25.2	56.1		8.7		44.8	46.2	K	9.5		12.4	54.2		8.8	34	1.4	39.0	
9.5		16.9	9.4		9.0		27.5	47.0	K	9.5		47.6	56.0		9.5		29.3	30.1		8.6		4.7	48.0	
8.9		41.8	48.5		9.5		29.0	8.8		9.5	9	0.4	27.0		8.5		30.7	10.2	K	9.5		33.8	33.9	
9.5		42.0	19.6		9.5		41.3	30.8		9.5		2.8	3.7		9.5		42.4	25.9		9.5		41.6	1.3	
9.3		59.7	7.4		9.0		57.0	22.5		8.5		3.7	50.1	K	9.5	23	30.4	47.3		6.8		56.3	59.8	K
9.3	49	31.3	8.1		9.5	58	13.5	43.6		9.0		20.3	32.4		9.5		34.9	50.8		8.8	35	16.9	17.7	Kb
9.0		35.2	59.9		9.4		32.0	15.8	aB	9.5		20.6	9.1		9.4		35.6	33.1		9.5		40.8	55.7	
9.0		36.0	22.9		9.5		36.0	7.5		8.3	10	38.2	45.7	Lb	9.0		52.8	9.8		9.5		46.1	37.7	
9.3		37.9	11.7		9.5		49.5	55.0		8.5		42.2	8.4	K	9.5		53.4	32.4	B	8.0	36	24.4	32.8	Kb
9.3		38.9	37.0		8.5	59	0.0	25.0		9.5	11	2.4	52.4		8.5		58.5	37.2		9.1		39.2	19.0	aB
8.9		41.2	54.1		9.3		2.3	29.5		9.2		21.5	3.0		8.3	24	6.5	52.2	L	9.1		45.4	11.4	a
9.4		50.4	5.8		9.5	0	0.2	3.0	B	8.5		22.3	12.0	K	8.9		11.9	29.1	K	9.5	37	2.8	40.0	
9.4	50	5.5	54.5		9.3		2.0	32.7		9.3		22.8	23.9		9.4		20.8	41.5		9.0		11.6	14.9	
9.5		18.1	3.9		9.5		4.5	55.8		9.0		32.5	18.1		9.0		23.1	0.8		9.2		12.6	53.4	
9.5		50.7	54.4		9.0		7.5	19.2		9.2		38.3	12.2		9.5		45.4	12.8		9.0		21.4	49.8	
9.4		53.6	58.9	aB	8.8		10.4	51.0		8.5	12	20.5	23.1	K	9.5		49.2	8.1		9.5		54.6	2.0	
8.7		58.9	24.8		9.2		48.4	26.7	K	9.5		26.4	30.0		9.5	25	11.1	19.3		7.8		58.7	30.4	K
9.2	51	0.7	41.2		9.0	1	9.5	28.3	K	9.2		50.1	52.2	b	9.0		15.4	0.3		9.5	38	2.8	40.7	
9.2		9.6	50.7		9.5		9.6	7.0		9.0		56.2	42.6		9.5		33.6	6.8		7.8		15.9	21.8	K
10pr.			29.57	1.50	10pr.			29.59	1.60	10pr.			29.62	1.75	10pr.			29.66	1.92	10pr.			29.70	2.06

4398m			
9.5	56	56.0	35.2

4601—4660				4661—4720				4721—4780				4781—4840				4841—4900			
	20ᵐ		+5°		20ᵐ—21ᵐ		+5°		21ᵐ		+5°		21ᵐ		+5°		21ᵐ		+5°
m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′
9.5	38	48.1	7.6	9.5	51	23.6	38.8	9.2	3	10.3	13.4	8.5	20	55.6	55.7	8.9	32	50.8	1.7
8.7	39	9.4	41.8	9.2		24.3	25.9	9.5		37.0	39.1	9.5		59.5	5.5	9.4	33	9.4	56.5
9.5		9.4	47.6	8.5		44.6	47.6	9.1		40.9	8.8	9.3	21	15.0	29.2	9.5		10.8	37.2
9.5		17.4	13.5	9.5		49.0	58.8	9.4		51.8	53.8	9.3		37.0	47.2	8.8		21.4	37.8
9.5		21.8	42.8	8.7	52	16.9	17.7	9.5	4	4.3	49.5	9.5		45.6	24.7	9.5		49.9	0.9
9.5		33.3	46.6	9.5		49.1	12.6	9.5		6.2	55.9	9.5		48.5	43.9	9.4		54.7	8.0
9.3		34.1	56.6	9.4		53.0	2.6	9.5		53.3	10.7	9.0		55.5	1.6 B	8.3	34	29.9	46.0 K
9.5		55.1	47.6	9.5		59.9	6.4	8.7	5	4.4	12.9 Kb	8.7		56.8	30.7 B	9.5		30.0	51.6
9.3		55.1	28.0	9.5	53	3.0	16.0	8.7		22.9	45.0 B	8.8	22	6.4	46.6	9.5		47.7	51.3
9.5	40	8.8	7.7	9.5		11.8	59.8	9.3		46.8	19.6	6.5		21.8	57.0 K	5.5	35	1.3	1.2 K
9.3		23.7	45.3	9.2		18.5	59.1	8.8		47.3	14.8 K	9.2		41.3	41.1	7.8		4.8	15.5 K
9.5		37.2	3.6	9.4		23.6	2.5	9.4		58.8	46.0	9.5		43.7	23.7	9.5		9.4	8.8
5.5		37.7	28.4 L	9.5		27.3	21.1	8.5	6	27.6	22.9 K	8.7		46.7	55.5 K	8.8		18.0	3.6
9.0	41	22.5	0.5	9.5		56.6	46.4	9.5		41.8	36.4	9.3		54.0	4.0	9.2		34.7	22.6
9.5		26.9	29.0 αB	9.5	54	2.7	45.7	9.5		49.0	31.5	9.4	23	3.3	3.5	8.2		54.2	43.3 K
8.3		27.3	51.4 B	9.5		14.9	38.1	9.5	7	33.3	16.5 B	9.5		5.9	15.7	9.5		58.9	21.6
9.4		42.3	42.9 αB	9.5		20.9	49.3	9.5		47.2	52.4	9.2		13.8	40.7 αB	9.3	36	52.5	41.9
9.5		47.6	33.6 αB	9.5		51.8	33.2	9.3	8	5.4	9.4	9.5		25.0	48.4	8.0	37	38.8	46.0 B
7.8		54.3	33.5 L	9.2		55.0	15.5 Bb	9.5		16.4	58.5	9.5		41.3	33.7	9.4		46.0	56.4
9.3		56.0	11.6	9.0		56.0	51.8	9.5		18.0	55.9	8.8		48.7	18.1	9.5		47.7	46.8
9.5		58.7	32.2 αB	9.5	55	11.2	51.8	9.0		34.0	8.4	9.3		53.7	36.6	9.3		48.2	59.5
9.2		59.6	58.4	9.5		18.5	1.4	9.5		40.0	22.5	8.4	24	21.8	53.9 K	9.0		51.7	8.2 K
9.2	42	10.1	6.7	9.3		42.6	14.0 B	9.5	9	8.4	45.2	9.5		37.9	3.7	8.8	38	33.0	3.4 Kb
9.4		29.9	22.0 αB	9.5		42.8	55.6	9.5		19.3	35.0	9.5		39.0	45.4	9.5		42.5	1.6
9.5		41.9	47.6	9.5		49.8	34.3	8.9	10	4.7	4.4	9.3		39.9	14.0	9.5	39	11.2	42.4
6.4		46.8	1.2 L	9.5		58.0	57.6	8.9		22.0	31.0	9.5		45.0	6.3	8.8		12.4	24.4
9.5		51.3	39.8	9.5	56	8.9	35.4	9.5	11	21.1	31.8	9.0	25	31.2	23.9	7.8		16.8	52.7 K
9.5	43	6.4	17.7	9.0		19.3	17.3	9.5		37.8	25.1 B	9.3		50.2	2.3	9.3	40	10.6	55.9
9.5		7.8	52.8	9.0		20.5	29.2	9.5		40.3	38.3 B	9.4		56.0	47.9 αB	9.5		20.0	8.6
9.5		33.0	1.4 α	9.5		22.0	5.2	9.5	12	3.0	14.4	9.2	26	17.9	2.9	8.3		36.8	8.0
9.4		43.5	46.0	9.0		30.5	49.7	9.5		23.8	9.8	9.5		23.6	17.2	8.5	41	21.9	48.5
8.0		54.6	50.7 L	9.5		32.5	55.0	9.5		27.1	47.9	9.3		43.6	31.5	9.5		25.4	51.6
9.5	44	2.3	42.1	9.5	57	10.0	59.2	9.5		31.4	20.5 αB	9.5		52.8	10.2	9.5		51.9	27.4
9.5		4.7	15.6	8.7		10.5	14.6	9.5		32.0	10.0	9.5		53.2	4.6	8.5		52.0	3.6
9.3		6.0	46.5	9.5		48.0	47.5	9.5		53.6	39.2	8.9	27	27.8	1.1	8.6		55.2	30.7 K
9.5		8.6	23.1	9.4	58	5.5	29.7	9.5		54.3	8.4	9.5		49.0	26.9	8.9	42	9.3	59.1
8.4		42.6	12.8 K	6.2		15.5	23.6 L	9.0		56.1	27.7	8.7		50.5	52.3 K	8.2		11.5	27.0 K
9.5		58.3	21.8 α	*9.3		44.5	2.6	9.2	13	3.4	4.4 b	9.2		59.4	12.1 α	9.5		13.6	35.2
8.5	45	7.7	24.5 L	*9.5	59	22.5	44.9	8.3		4.8	56.1 K	9.3	28	15.0	10.8 αB	8.8		31.7	16.2
9.0		57.7	43.2 B	8.9		26.0	32.7	9.5		27.5	4.6 ?	9.2		26.3	43.2	9.5	43	8.5	49.6
9.0		59.1	30.0	9.5		39.5	49.3 αB	9.5		35.9	41.0 αB	7.5		45.2	26.2 K	9.5		17.5	19.5
9.5	46	25.7	54.5	9.5		42.3	33.0	9.5		42.8	35.7	9.4		57.4	54.5	8.1		32.8	6.3 K
8.3		27.5	38.6 L	9.5		56.2	59.5	9.5		46.1	20.2	9.4		58.9	58.1	9.5		38.7	34.5
9.1		44.7	47.9 α	9.5	0	25.2	11.8	9.5	14	22.9	36.1	8.3	29	1.3	29.9 K	9.1		47.1	27.5 α
9.5		46.7	42.1	9.3		31.2	40.3	9.5	15	3.7	28.7	9.2		19.4	27.7	8.4	44	15.1	58.0 B
9.5	47	14.8	53.0	9.4		37.3	39.4	9.3		8.5	59.7	7.5		40.6	10.5 K	8.8		35.8	35.8
9.5		34.7	13.2	8.6		46.4	4.4 K	9.3		15.9	50.5 αB	9.3	30	0.3	51.5	9.5		49.7	8.5
9.0	48	20.3	20.4	9.4		47.3	23.5	9.4		41.1	45.0	8.0		0.4	12.2 K	8.7	45	7.1	43.0
9.0		33.7	20.7	9.2	1	9.1	18.7	9.3		44.2	57.0	8.5		28.8	59.1 K	8.8		14.9	49.8 K
9.2		47.1	40.7 α	9.5		14.6	49.8 αB	9.2	16	8.7	21.1 Bb	6.3		29.8	58.6 K	9.5		25.0	16.0 αB
8.3		50.7	47.6 Lb	9.5		19.7	38.1	9.3		28.9	11.5	9.2		33.8	8.1	9.5		32.8	56.8
9.5		53.8	1.4	9.3		26.6	47.6 αB	9.1	17	2.8	44.9 αBb	8.9		59.8	59.6	9.4		42.9	5.2
9.0	49	32.7	35.6	9.5		30.5	53.9	9.2		5.8	21.2	9.3	31	17.7	37.2	8.3	46	4.1	43.4 K
9.2		39.3	12.1	9.3		31.4	6.7	9.5	18	24.8	59.5 αB	6.2		17.9	7.0 K	9.3		5.2	24.0
9.0	50	6.4	16.6 K	9.1		36.3	45.5 αb	9.4	19	49.8	46.0	9.5		46.9	53.7	8.3		29.0	53.6 K
9.0		16.7	10.7 K	9.3	2	7.0	44.7 B	9.5		58.9	41.6	9.5	32	17.6	59.7	8.5	47	10.6	24.6
9.0		21.8	47.6	9.2		24.2	15.7	9.3	20	0.5	31.5	9.5		36.4	40.6	9.4		33.4	38.4
9.5	51	8.3	54.9	9.3		29.9	6.1	9.5		13.6	12.0	9.5		40.2	33.0	8.8		38.7	50.5
8.7		13.2	1.9 Kb	9.4		45.2	20.5	9.3		14.4	2.4	9.4		41.8	21.8	9.3	48	2.3	44.5
9.5		15.3	0.8	9.4		45.5	4.1	9.4		25.4	59.0	9.5		50.8	42.9	9.5		9.2	22.9
		+	+			+	+			+	+			+	+			+	+
10pr.		29.75	2.19	10pr.		29.79	2.32	10pr.		29.85	2.48	10pr.		29.92	2.61	10pr.		29.98	2.75

4698ᵐ				
9.7	58	54.3	8.3	B

4901—4960					4961—5020					5021—5080					5081—5140					5141—5200				
	21ᵃ—22ᵃ		+5°			22ᵃ		+5°			22ᵃ		+5°			22ᵃ—23ᵃ		+5°			23ᵃ.		+5°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
.3	48	36.7	48.5		3.4	2	54.1	29.3	K	9.5	18	21.2	30.1		9.4	41	30.0	53.4	αB	9.5	2	51.2	12.6	
.4	49	15.6	8.0		8.8	3	16.3	54.6		8.5	19	19.1	48.9	Kb	8.7		41.0	43.5	K	9.3	3	32.5	15.0	
.0		17.2	51.6		9.5		52.2	26.8		9.5		56.2	8.4		9.1	42	9.8	53.4	α	9.3		41.3	49.7	
.0		35.1	56.0		9.3	4	3.0	47.7	B	9.3	20	31.5	35.6	b	9.4		10.2	50.7		9.2	4	6.6	46.7	R
.3		36.1	53.4		9.5		19.0	47.4	B	9.5		52.7	8.8		9.3		10.4	11.0	α	9.5		47.6	11.1	
.5	50	0.2	5.0		8.5		20.8	28.5	K	9.5	22	10.4	22.5		9.5		34.6	11.1		8.4		50.0	49.2	K
.4		32.9	54.3		9.5		22.7	58.4		9.0	23	27.5	45.6		9.4		36.2	44.2	B	9.5	5	30.0	45.6	
.5		43.7	27 5		8.4		34.8	34.9	K	9.5	24	55.1	5.3		8.8		45.1	8.0		9.5		32.0	52.6	B
.0		46.9	37.2	B	9.2	5	0.2	8.9		8.7	25	33.2	51.2	B	9.3		50.9	11.8		9.5	6	33.4	30.8	
.0		47.1	15.5	K	9.3		41.8	32.1	α	9.5	26	18.2	10.2		8.7		59.9	48.0	Kb	7.5	8	5.3	23.6	K
.5		51.3	2.9		8.6		44.1	26.4	Lb	9.4		41.5	6.9		9.0	43	11.3	0.5		9.3		47.7	21.7	
.5	51	14.3	39.1		9.5		47.2	57.8		8.8		41.7	56.7	K	9.0		25.9	30.1		9.0		58.0	48.7	
.2		15.8	19.1	K	8.8		59.0	7.5		9.5	27	7.7	36.2		8.8		26.2	48.5		9.0	9	4.2	45.7	
.5		20.1	39.5		9.4		59.8	23.4		9.5		32.6	7.2		8.7	44	10.7	51.0		9.3		53.0	3.4	
.0		21.6	19.8	K	8.0	6	44.6	3.5	Kb	9.2		47.9	38.4		8.6		12.3	0.8	Kb	9.0	10	12.5	44.4	B
.2		46.9	50.5		8.6	7	2.2	37.8		8.3		54.5	12.0	K	8.3	45	15.1	15.1	K	9.5	11	47.6	35.1	
.5	52	2.2	39.4		9.1		42.1	21.8	α	8.3	28	20.7	29.4	K	9.2		26.5	3.8	K	8.3	12	7.2	5.6	K
.0		13.6	35.7		9.4		52.3	50.8		9.5		28.3	28.6	α	9.4		40.9	5.0	Kb	9.3		19.3	3.8	
.4		39.5	47.6		9.3		59.0	31.4	αB	9.0		37.7	40.7		9.5	46	23.7	33.6	αB	9.2		19.5	51.5	
.3		58.6	23.6		9.0	8	1.3	20.7		9.3		43.9	8.7		9.5		26.7	24.5		9.0	14	28.5	53.6	B
.2		59.9	47.6	α	9.2		2.4	8.3		9.3	29	0.4	55.6		9.0		44.8	41.7		8.7		59.1	52.3	
.5	53	12.8	25.3		8.3		17.9	55.0	K	7.7		10.5	45.4	K	9.3		52.4	16.2		8.8	15	37.8	44.4	
.3		13.3	51.2		9.5		19.4	15.2		9.3		11.8	6.5		9.2	47	3.6	12.9		9.5		53.2	57.2	
.3		18.5	16.8	Kb	9.2		46.3	54.5		9.4		49.0	39.0		9.5		4.1	44.3		9.2	16	57.1	14.7	B
.5		27.9	51.5		8.9		51.0	17.4		9.4	30	17.5	20.6		8.8		33.2	22.6	K	7.8	17	0.7	23.5	K
.8		28.3	38.7		9.3	9	23.1	28.9	α	8.8		34.1	9.3	K	9.2	48	4.5	27.3	αB	9.4		45.0	6.5	αB
.4		36.3	9.9		9.3		27.9	39.7		9.5		50.1	53.5		9.5		32.6	0.0		9.0		49.1	16.7	L
R		46.9	25.6	B	9.3	10	57.1	29.2		9.0	31	15.2	31.4		9.3		38.9	59.5		8.7		58.3	14.9	Kb
.4		47.4	8.6	K	9.3		58.3	14.5		9.5		51.5	44.5		9.3		41.8	33.6		9.5	18	38.4	52.6	
.5	54	1.9	29.2		9.3	11	4.3	9.3		8.8		51.8	30.3		8.8		58.9	3.0	Kb	9.3	19	45.0	56.6	R
.5		38.6	43.3		9.4		23.0	38.2		9.5	32	36.0	52.0		8.8	49	32.5	20.2	K	9.5	20	11.2	47.0	
.5		47.2	58.4		9.3		49.6	16.7	α	8.8	33	6.7	18.8		9.5		42.8	26.2		9.4		22.0	56.7	
.5		57.7	56.0		9.1		54.5	14.6	αb	8.5		9.8	29.3		9.0	50	28.6	18.5		4.7		37.0	35.3	K
.4	55	20.7	6.0		9.4	12	1.5	3.0		8.5		15.5	45.9	K	8.8	51	5.3	34.8		9.2		54.2	18.1	B
.5		29.4	21.1		9.3		22.9	59.0		9.5	34	14.2	16.8		8.2		49.4	22.5	K	8.2		54.6	17.4	αK
.5	56	3.8	20.6		9.4		51.0	50.1		9.5		21.7	29.6		9.5	52	26.7	16.0		8.5	21	5.3	0.5	Kb
.5		10.6	17.0		9.3		59.1	47.4		9.5		49.1	22.3		9.3		44.3	18.2		9.5		43.2	34.8	
.5		16.8	6.0		6.1	13	11.2	3.8	Kb	9.2		58.2	39.2		9.3	53	38.7	22.0		8.3	22	9.4	17.4	
.4		39.8	33.7		9.4		43.9	17.3	αB	8.4	35	30.5	54.3	K	9.5	55	7.5	23.5		9.5		32.0	53.0	K
.4		44.3	51.3		8.7		44.5	38.0	S	8.9		42.7	51.2		9.0		26.2	2.6		9.5		48.3	38.2	
.5	57	14.2	4.4		8.4		44.5	51.7	K	9.5		49.6	45.6	B	8.5		30.2	27.5		9.5		51.4	56.8	
.5		30.0	14.0		9.2		50.2	37.4		9.5		51.3	56.9		9.3	56	19.1	16.0		9.5		56.4	51.7	
.5		57.3	10.4		9.2	14	2.5	28.4		8.5	36	7.0	8.5		7.3		43.4	50.1	K	7.8	23	2.1	38.0	K
.9	58	1.4	56.6		9.5		14.3	34.2		9.5		12.8	46.9		9.0		59.3	33.6		9.3		4.8	1.4	
.3		4.7	9.5		9.5		24.9	3.8		7.5		46.5	58.7	K	9.2	57	6.0	57.1		9.5		25.5	30.5	
.5		26.0	33.5		9.2		30.0	57.6	B	9.5	37	33.9	52.6		9.5		6.8	15.0		9.0		38.9	36.7	
.5		27.4	16.9	K	9.4		34.5	36.9		9.5		44.2	8.2		9.3		21.1	29.2		9.3		57.4	53.5	
.5		35.4	23.9	K	7.9	15	18.1	45.1	K	8.7		52.9	11 6	K	8.5		37.2	44.2	K	9.1	24	13.0	56.9	αBb
.0		42.6	39.5		9.3		55.5	48.5		8.3		54.3	37.8	K	9.3		58.1	57.8		9.5		17.7	24.2	
.3		56.4	30.4		9.0	16	1.6	43.9	K	9.2	38	25.5	10.7		9.3	58	29.3	27.3		8.8	25	42.9	7.0	
.5	59	11.4	14.1		8.2		15.2	48.1	K	8.9	39	3.6	31.6		9.3		45.7	2.2		9.1	26	29.2	9.7	K
.5	0	15.4	27.0		8.5		21.7	14.7	K	9.5		5.0	36.6	αB	9.5	59	5.8	6.9		9.5		54.9	1.3	
.8		17.4	16.2		9.5		27.0	7.7		8.2		41.6	47.2	B	9.4		8.7	49.5	αB	9.2		56.0	9.3	α
.5		19.5	0.8		9.2		27.2	1.1		8.8		58.1	45.0		9.4		23.2	52.4		8.8	27	29.5	41.2	
.4	1	44.2	58.9		8.5		45.0	28.5	K	9.5	40	3.1	31.9		8.2	0	22.6	49.2	K	8.5	29	13.6	47.1	L
.5		49.9	19.8		9.3		51.3	59.3		9.4		3.5	0.5		9.3	1	18.3	10.5		9.3		25.7	44.4	
.5	2	6.8	18.7		9.2		54.6	56.2		7.8		10.5	8.5	K	9.3		19.9	31.9	b	8.6		25.7	6.6	K
8		10.8	53.9		9.2		58.0	25.1		9.4		16.0	50.9	αB	9.3		49.0	51.5		8.8		38.8	21.6	K
.0		11.5	17.2		8.9	17	41.8	52.8		7.8		49.6	6.5	K	9.3	2	32.9	12.2		9.5	30	40.1	56.2	
.1		41.6	56.9	α	9 5		56.4	52.2	α	9.4	41	22.0	19.7		8.8		35.2	2.4		8.6	31	9.6	26.1	L
	+		+			+		+			+		+			+		+		+		+	
0pr.	30.05		2.84		10pr.	30.14		2.97		10pr.	30.24		3.10		10pr.	30.33		3.18		10pr.	30.50		3.29	

5201—5218					5214—5226					5227—5239					5240—5251					5252—5263				
	23ʰ		+5°			23ʰ		+5°			23ʰ		+5°			23ʰ		+5°			23ʰ		+5°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	31	12.9	55.2	K	8.8	36	15.4	40.3	K	9.5	45	26.5	44.8		9.5	50	11.0	37.2		8.5	54	59.3	31.5	K
9.5		20.0	42.4		9.1		25.8	58.7	*a*	9.2		29.3	9.3		9.4		14.0	43.9	*aB*	9.0	55	19.6	13.9	K
9.5		45.0	58.7		9.5	37	20.5	24.7		9.5		33.5	38.8		9.5		49.3	23.2		9.5	56	33.7	15.0	
7.9		47.3	23.9	K	9.4		30.0	29.6	*aB*	8.5		43.3	53.3	K	8.8	51	36.2	36.2		9.5		50.6	52.5	
9.5		54.7	14.9		9.1	38	2.5	0.7	*ab*	9.5	46	18.1	56.8		9.0	52	19.9	51.6	L	9.5	57	2.6	50.8	
9.5	32	47.4	25.3		8.7		6.4	40.3		9.0		23.8	4.3		8.3		28.9	9.0	K	8.5		16.3	43.2	K
9.5	33	12.9	57.1		9.5	40	24.5	13.8	*R*	9.0		50.5	10.6	K	9.3	53	3.4	8.0	K	9.0		24.9	36.6	K
9.0		46.4	27.9	L	9.2		50.5	59.8	*b*	8.7	47	5.5	46.4	L	8.0		58.3	58.4	K	9.5	58	33.4	45.6	
8.5		47.7	27.6	L	9.3	41	28.7	51.5		8.9		9.8	44.9	*B*	9.5	54	15.6	3.0		9.5		41.9	35.3	
8.8	34	12.9	28.7	L	8.7		41.5	35.1	K	8.5		30.5	17.9	K	9.5		28.2	21.8		9.3	59	7.0	3.2	*b*
9.5		53.2	18.4		8.5	42	51.5	44.6	L	8.8		36.8	8.2	Kb	9.5		42.6	41.5		9.0		22.9	50.5	
9.4	35	10.3	25.2		8.7	43	14.0	13.0	K	9.5		56.5	4.4		9.3		56.9	21.5		8.8		45.9	23.2	K
8.9	36	13.6	4.7	Kb	9.0	44	58.2	8.0	K	9.4	49	1.1	53.1				+	+				+	+	
		+	+				+	+				+	+		*10pr.*		*30.66*	*3.34*		*10pr.*		*30.70*	*3.34*	
10pr.		*30.57*	*3.32*		*10pr.*		*30.61*	*3.33*		*10pr.*		*30.65*	*3.33*											

Zone +6°

1—20					21—40					41—60					61—80					81—100				
	0ʰ		+6°			0ʰ		+6°			0ʰ		+6°			0ʰ		+6°			0ʰ		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	2	34.3	7.1		8.7	11	39.0	28.9	K	9.4	18	3.1	32.1		9.0	23	31.5	56.3	K	9.5	30	22.3	33.0	*aB*
9.3		44.6	39.4		9.5	12	0.4	11.3		9.0		8.2	55.7	B	9.5	24	16.4	1.0		9.5		25.3	35.5	*a*
9.5		59.1	1.1		9.4		42.3	41.5	*aB*	7.3		13.2	53.5	K	9.3		47.0	7.4	*aB*	9.3		34.9	29.2	
9.1	4	4.9	3.1	*ab*	9.5		54.6	9.6		9.2		18.0	55.0	*a*	6.2		55.4	9.3	K	9.5	31	6.2	50.9	
9.3		7.8	18.8		9.4		55.1	45.8		8.4		21.1	18.6	K	9.3		57.0	9.3	K	8.7		37.1	46.6	L
9.3		35.3	12.6		9.3	13	0.1	30.7		9.3		39.3	3.7		9.1	25	12.9	47.9	Kb	8.9	32	39.3	49.8	K
8.8	5	34.6	4.8	K	9.5		44.7	5.5		9.5	19	18.5	55.0		8.8		39.2	46.9	K	9.1		47.3	55.8	K
9.5		45.4	16.7		9.3		47.5	29.1		9.2		20.1	33.9		8.7	26	17.2	53.0	K	9.5		51.8	8.8	
8.8	6	16.9	8.0	K	9.5	14	10.0	2.5		8.0		31.8	19.5	K	9.5	27	1.3	17.8		9.0	34	30.5	27.5	Kb
8.7		39.0	4.3	K	8.5		33.0	12.1	K	9.5		39.8	17.2		9.5		26.9	20.3		9.2		58.6	50.6	
9.5	7	7.4	23.3		9.4	15	42.3	55.3	*a*	9.5		40.2	55.0	*a*	9.3		35.5	13.4		8.6	35	29.4	1.9	K
9.2		28.2	54.0	*b*	9.3		50.1	59.9		8.7	20	7.0	26.1	K	8.2		38.6	55.6	K	9.5		40.9	51.3	
9.5	8	39.8	12.0		*9.5	16	58.6	53.9	B	8.6		50.2	52.7		9.5		57.2	6.1		9.3		41.8	31.3	
9.5		51.9	32.8		9.5	17	11.2	57.3	*B*	8.5	21	2.1	17.0	K	9.5	28	13.1	2.9		8.7	36	22.6	45.4	K
9.5	9	8.0	4.0		9.5		22.2	58.5		9.5		46.8	23.9		8.3		28.4	49.2	Kb	8.7		50.5	58.4	K
9.1	10	15.5	57.0	K	9.0		23.9	55.2	R	9.5	22	14.2	39.7		7.8		33.8	21.3	L	8.9	37	8.2	6.3	
9.0		16.5	5.1		9.0		24.8	6.1		9.3		39.5	45.1		9.3		49.5	27.2		8.5		13.3	49.5	K
9.5		26.6	29.4	*aB*	9.4		30.0	44.0		9.4		46.3	22.7	*aB*	9.5	29	34.6	12.5	*aB*	9.4	38	9.3	0.4	*aB*
9.5		43.8	29.7	*aB*	9.5		34.6	15.2	*aB*	9.3		55.7	6.6		9.5		40.4	41.6		9.0		15.0	6.1	
9.5	11	5.4	57.6		9.3		51.7	51.4		9.2		58.5	25.2	*b*	9.2	30	18.1	23.1	*b*	9.5		17.5	30.3	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.77*	*3.34*		*10pr.*		*30.82*	*3.33*		*10pr.*		*30.85*	*3.33*		*10pr.*		*30.90*	*3.32*		*10pr.*		*30.95*	*3.30*	

32ʰ			
9.7	16	35.9	1.0	B

101 — 160

	0ˢ — 1ˢ	+6°	
m	′ ″	′	
9.1	38 25.0	21.3	aB
9.5	39.2	58.5	
9.1	39.9	37.9	ab
9.5	40 39.0	49.8	
7.0	46.2	30.8	K
9.4	41 9.7	31.8	
4.5	10.3	48.1	K
9.4	19.2	12.7	
9.2	59.0	3.7	
9.5	42 17.4	33.0	
8.3	33.4	53.6	K
9.5	35.9	46.0	
9.0	37.3	38.6	K
8.5	58.9	18.6	K
8.3	43 33.8	5.8	Kb
9.5	44 23.5	23.0	aB
9.4	24.0	11.1	B
9.5	37.3	50.1	B
8.6	45 12.3	54.8	Kb
9.5	18.2	31.7	aB
9.5	35.8	40.2	
8.7	46 17.9	28.6	K
9.0	47 9.1	45.5	
7.7	48.5	3.7	K
9.5	49 10.1	12.3	
9.2	22.4	36.4	K
9.0	22.9	45.5	K
9.5	42.5	3.9	
9.5	50 2.9	40.4	
9.5	17.0	56.0	
8.2	26.6	49.5	K
9.4	33.4	26.5	
9.4	40.6	31.2	
9.5	48.0	59.0	
7.3	48.6	3.2	Kb
8.6	51 27.3	55.7	K
9.5	37.9	36.9	
9.4	52 1.9	14.9	a
9.4	20.8	13.0	B
9.5	44.0	11.0	
9.5	58.8	30.8	a
8.2	58.9	34.4	L
9.0	53 16.2	41.1	
8.2	54 8.9	32.6	K
9.5	46.3	24.8	aB
9.3	56.4	12.8	
8.0	55 17.6	42.7	K
9.5	21.4	3.8	
9.1	34.6	32.5	aB
9.3	56 6.8	52.0	aB
9.5	14.4	32.4	
9.2	18.9	27.7	
8.8	38.3	26.0	K
9.5	59.4	41.3	
7.8	57 16.9	14.4	K
9.5	58 2.0	0.1	
9.4	37.2	3.4	aB
9.5	40.9	14.4	
9.5	57.0	51.4	
9.5	0 5.4	44.8	
10pr.	+ 31.85	+ 3.26	

161 — 220

	1ˢ	+6°	
m	′ ″	′	
9.5	0 15.4	13.6	
9.4	43.4	12.2	
9.5	48.9	34.0	
8.7	1 18.5	44.6	K
9.4	19.8	5.1	
9.5	48.3	48.8	
9.5	2 45.8	20.3	
8.8	59.3	44.6	Kb
9.4	4 2.6	48.8	aB
9.5	19.7	45.5	aB
9.4	26.5	19.8	
9.5	58.4	40.1	
9.5	5 22.5	56.0	
5.2	6 10.4	49.2	K
7.7	11.5	48.3	K
9.2	12.6	11.3	
9.5	14.2	16.7	
8.7	14.4	6.7	K
9.0	37.9	32.0	
9.0	45.2	4.6	
6.2	7 9.9	14.0	K
9.5	33.8	37.3	
9.5	36.0	54.6	
9.2	47.9	50.8	
8.2	8 1.1	10.9	K
9.0	6.4	31.1	
9.5	27.0	2.1	
9.0	41.9	54.4	
8.8	9 21.2	2.5	K
9.5	39.9	4.3	
8.8	10 1.1	23.3	
9.3	9.6	54.7	
9.5	35.1	9.3	
9.5	35.9	34.1	
7.8	11 23.4	39.7	Kb
9.5	56.9	51.5	
8.5	59.4	43.5	K
9.5	12 20.7	4.4	
9.4	21.4	45.6	
9.0	22.4	37.0	
8.8	39.9	20.6	
9.5	13 4.9	13.4	
8.5	29.1	50.3	B
8.7	44.4	12.7	K
9.5	14 24.2	41.8	
9.5	33.5	2.0	
9.5	56.6	45.6	
9.5	56.9	21.5	
9.5	15 11.0	15.7	
9.3	17.9	49.8	
7.7	21.9	38.3	K
9.5	16 0.5	46.6	
9.3	25.9	38.0	
9.3	26.7	26.5	
9.5	53.4	23.8	aB
9.0	54.4	37.6	
9.3	17 3.1	21.3	
9.0	6.1	9.5	
9.0	7.4	14.8	
9.3	26.0	59.1	B
10pr.	+ 31.17	+ 3.19	

221 — 280

	1ˢ	+6°	
m	′ ″	′	
9.0	19 3.9	32.2	R
8.9	7.2	39.7	
9.5	34.1	8.0	
8.3	46.9	12.6	K
9.5	20 22.0	26.8	
9.5	59.7	19.6	aB
9.4	21 14.4	19.4	aB
7.2	29.9	32.4	K
9.3	38.5	40.4	
9.5	46.4	3.3	
9.0	48.0	16.5	
9.0	23 0.6	18.4	
9.0	31.8	55.8	
9.4	26 5.7	13.2	
9.0	9.6	25.0	
9.5	20.6	37.6	
9.5	57.5	7.6	
9.5	27 1.4	24.8	
9.5	5.5	49.7	
8.8	10.4	1.3	R
9.0	17.8	38.4	K
9.5	35.7	28.0	
9.5	28 24.3	49.4	
6.9	28.1	54.1	K
9.2	33.1	52.9	B
9.3	29 24.5	10.6	
9.4	31.7	45.9	
9.0	30 3.6	24.0	
9.1	38.3	18.5	K
9.1	42.1	53.5	ab
9.4	56.1	44.2	
9.5	31 0.8	47.7	
9.5	42.4	16.2	
9.5	49.5	24.0	
9.2	32 30.4	14.9	
9.0	44.2	52.7	B
8.1	48.8	21.2	K
9.0	33 24.1	13.2	R
8.5	31.6	51.4	
8.8	34 7.8	16.7	R
8.9	48.5	40.6	B
9.2	35 25.7	25.4	R
9.5	36 15.8	29.9	
9.0	47.6	20.8	R
9.5	37 12.8	34.1	
9.5	38 6.1	43.5	
9.5	16.7	48.3	
9.5	17.1	41.7	
9.0	49.9	20.6	R
9.5	39 0.7	14.2	
9.0	41.6	15.5	
9.5	40 1.5	5.9	
9.3	29.5	53.7	
9.3	57.7	56.2	B
7.3	41 4.1	57.7	K
9.4	23.9	16.8	aB
9.4	33.1	19.5	
9.5	59.9	2.4	
7.8	42 19.8	29.9	L
9.4	31.6	14.7	aB
10pr.	+ 31.31	+ 3.08	

281 — 340

	1ˢ — 2ˢ	+6°	
m	′ ″	′	
9.5	42 36.4	41.8	aB
9.0	45.9	11.3	B
9.5	46.2	34.3	aB
9.3	58.4	17.6	
9.4	43 0.9	14.5	aB
9.3	11.1	53.7	B
8.8	33.4	0.3	B
8.1	44 7.3	51.5	K
9.2	33.6	51.2	aB
9.0	56.4	36.9	
9.5	56.8	51.8	
9.2	45 15.4	18.1	b
9.0	16.4	37.6	
9.2	40.5	19.2	a
9.5	47.5	54.9	
7.8	46 2.1	54.6	K
9.3	22.2	51.5	
9.0	54.1	20.4	K
9.5	47 4.0	28.2	
8.8	42.4	34.1	
9.5	56.5	52.2	
8.9	48 48.3	6.0	K
9.0	49 3.7	45.6	
9.3	31.7	23.7	
9.2	43.6	9.6	
9.5	50 14.4	40.0	
9.5	25.2	13.2	
9.5	46.4	8.7	
9.0	51 10.7	55.9	K
8.8	22.2	49.7	K
9.5	31.9	58.9	
9.5	33.0	52.7	
9.5	52 4.2	9.3	
7.7	36.2	13.7	K
8.9	41.0	53.8	
9.5	53 3.4	35.4	
9.5	40.3	55.2	
9.0	54 17.9	6.1	K
9.0	55 1.1	58.2	K
9.4	29.2	2.0	
9.0	56 35.9	59.6	K
9.5	43.1	16.2	
9.5	51.2	31.2	
7.0	58 12.1	20.6	Kb
9.5	55.8	31.1	
9.5	59 29.4	42.9	
8.5	32.4	36.6	L
8.8	0 44.5	24.8	
8.7	1 12.9	1.6	K
8.5	17.4	36.2	K
8.5	18.1	19.2	
9.5	2 22.9	0.4	
9.5	23.8	42.6	
8.8	3 21.0	52.0	
9.5	4 38.2	33.1	
9.5	56.0	56.7	
9.5	6 18.7	6.7	
9.5	35.5	41.6	
9.5	43.8	52.8	
9.5	7 43.5	36.0	
10pr.	+ 31.43	+ 2.95	

341 — 400

	2ˢ	+6°	
m	′ ″	′	
9.3	7 51.0	27.0	
8.5	8 38.0	16.9	
9.3	47.0	18.0	a
8.3	10 39.5	1.9	K
8.7	11 26.0	48.2	
9.4	51.8	40.2	
8.7	12 11.2	0.7	K
9.0	45.3	48.4	K
8.0	55.0	47.7	Kb
8.3	13 29.6	56.9	K
9.5	14 32.5	11.4	
9.5	50.9	9.6	
9.5	51.6	52.7	
9.5	58.7	10.9	
9.0	15 25.6	56.4	K
9.5	54.0	37.0	
9.5	16 43.1	4.6	
9.5	46.4	26.3	
9.5	17 42.1	40.4	
8.5	57.0	34.6	K
9.0	18 15.0	19.7	
8.8	19.3	32.1	K
9.5	54.5	50.6	
9.5	57.2	56.3	
9.3	19 6.8	3.1	
9.2	8.0	12.3	b
9.2	13.1	57.8	K
9.5	28.1	8.1	
9.5	47.0	45.0	
8.8	21 3.5	34.0	
9.2	20.0	9.6	aK
9.5	20.0	40.9	
9.2	31.0	36.4	
9.0	22 4.0	30.5	
9.4	23.3	33.7	B
9.5	23 7.0	45.7	
9.5	29.8	2.3	
9.5	41.7	0.8	
9.5	24 15.0	37.0	
7.8	36.8	4.2	K
9.3	58.1	11.6	B
8.5	25 5.5	46.1	
9.5	12.6	50.2	
8.0	20.5	18.4	K
9.5	29.0	16.2	
9.2	26 13.7	59.7	aB
9.3	16.0	18.3	
9.5	22.0	29.8	
9.3	30.5	23.2	
9.3	51.5	22.1	
9.3	27 20.0	16.2	
7.0	26.5	50.5	L
8.5	31.0	10.2	K
8.9	41.7	41.5	B
9.3	44.5	50.9	a
9.3	55.0	35.3	
9.5	28 4.0	3.3	
6.5	10.8	10.4	Kb
9.4	29 16.5	52.9	
9.2	29.9	38.6	K
10pr.	+ 31.60	+ 2.73	

401—460

m	2ᵐ ′ ″	+6° ′	
9.3	29 46.3	24.5	
8.8	50.5	57.8	K
8.8	54.5	55.5	K
9.5	30 6.4	33.6	
8.5	31 0.4	19.0	K
9.5	54.9	31.5	
9.0	33 24.9	53.4	
9.3	34 6.0	17.6	
8.5	26.0	15.5	K
9.0	47.4	21.5	K
9.0	52.0	39.9	
9.5	58.9	18.7	
8.2	36 29.9	46.1	L
9.5	39.4	27.3	
9.5	44.0	13.4	
9.5	57.5	24.2	
9.2	37 8.8	2.6	
9.0	11.5	35.6	
8.8	30.2	51.6	
8.5	38 16.0	37.7	
9.3	39 22.5	38.8	
9.3	51.0	7.3	
9.3	40 9.0	11.0	
9.2	14.1	33.3	αB
9.5	17.8	57.1	αB
8.8	24.4	14.5	
8.5	33.3	42.2	K
8.2	44.1	56.2	K
8.5	45.0	43.3	K
9.5	41 21.5	30.2	
9.0	35.0	26.6	
9.5	39.0	43.7	αB
8.5	42 35.5	5.4	Kb
9.5	36.9	19.9	B
9.5	45.4	1.6	
8.1	43 54.2	57.1	K
9.1	54.9	52.8	αB
9.5	44 23.0	22.8	
9.3	33.9	26.3	
9.5	45.0	17.0	
9.4	45 7.3	44.4	αB
9.5	19.3	36.6	αB
9.5	38.1	36.4	
9.5	46 4.4	47.5	
9.5	47 19.5	35.0	
9.0	21.3	29.4	K
9.2	44.5	21.4	K
8.5	48 3.0	40.6	K
9.5	29.4	51.0	
9.5	31.7	2.2	
9.3	49 2.3	6.7	
9.5	41.3	6.6	
9.0	56.0	35.0	
9.3	50 1.9	19.0	
8.8	7.0	26.1	Kb
9.2	11.2	51.8	
9.5	21.1	58.5	
9.3	51 18.5	44.0	
9.5	39.4	9.6	
7.8	44.0	4.9	L
	+	+	
10pr.	*31.71*	*2.55*	

461—520

m	2ᵐ—3ᵐ ′ ″	+6° ′	
8.7	52 7.2	56.4	
9.3	10.4	31.7	
9.2	18.3	31.7	Kb
9.0	53 41.9	36.7	
9.5	54 3.0	41.6	
9.2	31.9	53.9	b
9.0	59.0	29.4	
9.5	55 49.0	51.3	
9.5	58.1	2.6	
8.3	56 16.3	42.9	
9.0	39.5	4.2	
8.5	57 14.3	18.3	
9.5	15.7	37.7	
8.8	29.2	38.1	K
9.5	56.8	20.6	
9.5	58 38.7	51.8	
9.5	45.3	3.4	
9.0	54.3	26.1	B
9.5	59 25.7	52.0	
8.8	52.5	7.2	
9.4	57.4	11.1	
8.5	58.7	40.9	
8.0	0 14.7	41.2	
9.0	19.5	14.6	
7.9	43.5	9.7	K
8.3	1 28.0	54.5	K
8.5	29.4	53.0	K
8.3	2 13.0	8.8	K
9.5	13.3	25.3	
9.5	44.8	7.7	
9.5	51.0	35.2	
8.7	3 26.3	17.9	K
8.3	27.3	37.4	Kb
9.3	48.0	16.5	a
9.5	4 7.4	53.0	αB
6.4	45.8	6.7	K
9.5	5 53.5	32.1	
9.5	6 20.5	41.9	
9.3	20.5	8.0	
9.5	52.9	34.6	αB
8.8	7 25.0	33.3	K
9.5	52.5	38.2	
9.5	8 12.5	17.8	
9.5	13.5	3.7	
9.5	13.7	55.8	
9.2	25.1	32.2	K
9.3	9 6.3	52.9	
7.5	27.0	16.8	K
9.5	55.0	42.5	
9.5	55.8	38.4	
~~9.5~~	~~10 58.0~~	~~53.4~~	
8.8	11 *1.9*	52.2	K
9.5	3.8	34.9	
9.5	8.5	7.7	
9.0	10.0	45.4	
9.3	11.4	56.8	
8.8	19.1	53.8	K
9.5	40.3	1.5	αB
9.5	12 15.0	21.3	
9.5	54.0	57.5	
	+	+	
10pr.	*31.81*	*2.33*	

521—580

m	3ᵐ ′ ″	+6° ′	
9.5	13 3.0	14.4	
9.5	15 10.5	16.5	
9.3	36.0	39.5	b
9.5	16 20.7	58.7	
9.3	46.5	28.6	
9 5	57.4	6.7	
9.0	17 21.9	51.7	K
9.5	18 1.0	18.3	
9.2	8.8	58.9	K
8.8	19 1.4	9.1	
9.5	28.0	11.7	
9.5	47.5	51.9	
9.2	20 14.7	44.7	K
9.5	19.4	53.3	
8.2	30.0	47 4	K
9.3	21 38.0	8.1	
9.5	55.8	9.9	
9.0	58.1	52.8	B
9.3	22 0.1	5.7	
8.0	23 18.5	42.8	L
9.0	38.5	29.3	K
9.3	57.0	39.4	
9.5	24 9.7	59.0	
9.5	11.3	24.6	
9.5	38.1	51.8	
9.4	25 2.0	24.9	
9.5	9.0	39.5	
9.0	17.8	8.8	
9.5	27.5	57.2	
9.0	53.2	34.9	K
9.5	55.0	55.7	
8.0	26 2.5	25.6	K
8.9	7.9	56.9	
9.0	52.5	43.2	
9.0	59.5	21.4	
9.5	27 48.8	53.1	
9.5	53.5	23.0	
8.8	59.7	5.5	K
9.5	28 27.0	14.7	
9.3	29 20.5	23.8	
9.5	56.6	12.7	αB
8.8	30 0.0	47.0	
9.2	31 44.2	15.8	K
8.5	32 7.5	19.2	K
8.2	36.6	4.7	K
9.3	43.5	39.8	
9.5	52.3	29.3	
8.7	33 1.0	15.1	K
9.5	40.5	35.5	
9.0	47.5	23.7	
8.5	34 4.3	50.7	Kb
9.4	11.0	48.1	αB
9.5	35 22.8	15.9	αB
8.7	42.5	49.9	K
9.5	52.0	38.7	
9.0	52.8	22.7	Kb
9.4	36 0.5	55.6	
9.5	30.0	54.5	
9.3	42.5	29.0	
9.5	37 18.2	57.8	
	+	+	
10pr.	*31.91*	*2.08*	

581—640

m	3ᵐ—4ᵐ ′ ″	+6° ′	
8.0	37 19.5	10.5	K
7.3	59.2	44.7	K
6.7	38 26.0	20.7	K
8.0	40.5	48.1	K
9.5	39 9.8	4.9	
9.5	25.1	36.3	
7.9	40 17.1	40.7	Kb
9.0	41 19.7	22.2	K
8.6	28.9	55.2	K
7.5	42 24.4	10.6	Kb
9.2	49.2	39.2	K
8.7	43 9.0	43.4	K
9.0	26.2	34.1	K
6.1	44 16.9	5.7	Kb
9.5	28.4	58.4	αB
9.5	45 21.7	38.6	
9.5	23.5	7.4	
9.2	29.4	5.7	K
9.5	46 0.3	18.4	
9.0	2.4	25.6	K
9.5	5.7	39.5	
9.5	47 40.7	29.5	
9.5	49.2	14.6	
9.5	48 24.7	53.9	
7.8	51.2	17.0	
9.0	49 26.2	30.9	
8.5	52.2	27.4	K
9.5	54.7	21.2	
9.4	50 58.1	22.4	αB
9.5	51 18.9	51.3	
9.4	29.0	52.8	
9.5	46.2	27.7	
9.5	58.2	54.8	
9.5	53 8.2	53.2	
9.3	22.2	20.5	
9.5	54 15.7	47.3	
8.7	19.8	7.1	K
9.3	44.2	50.0	
9.0	45.9	38.2	
9.5	46.5	15.3	
9.5	55.2	29.9	
9.3	55 18.7	17.3	
9.5	20.9	54.2	
9.4	33.5	44.3	αB
9.0	54.0	24.3	
9.0	56 10.2	9.3	
9.5	17.5	49.6	
9.5	31.6	43.6	
9.4	57 30.2	53.4	
9.5	48.3	56.7	
9.2	58 27.5	3.5	
9.4	59 2.0	22.2	
9.0	15.7	3.7	
9.5	0 27.2	40.7	
9.5	42.2	27.1	
8.5	1 1.7	23.6	K
7.2	41.9	21.1	K
9.3	2 29.3	29.7	αB
9.2	33.8	46.0	
9.1	47.1	3.2	a
	+	+	
10pr.	*32.01*	*1.78*	

641—700

m	4ᵐ ′ ″	+6° ′	
9.1	2 57.6	54.0	K
8.8	3 17.9	54.5	K
8.7	20.0	21.1	
9.5	50.1	59.3	
8.9	4 10.3	55.9	Kb
9.5	55.0	0.5	
9.3	5 24.3	58.7	αB
8.7	27.5	13.5	
9.3	6 24.1	6.6	
9.3	31.3	14.5	
9.5	54.2	47.6	
7.8	8 31.2	47.1	P
9.0	36.9	2.9	
9.5	9 31.2	52.5	
9.5	10 1.5	31.2	a
9.1	13.3	30.1	ab
9.2	27.4	56.5	a
9.0	11 8.6	55.1	K
9.5	31.0	9.2	
9.5	33.5	47.1	
9.5	40.0	17.0	
9.5	12 12.3	2.4	
8.9	14.0	10.4	
9.3	13 2.8	8.3	
9.5	26.5	35.4	
9.4	47.0	53.1	αB
8.5	48.3	37.4	
9.4	53.4	53.4	αB
8.8	14 38.8	10.7	K
9.3	15 1.3	21.8	
9.0	22.5	31.5	
9.5	23.1	12.7	
9.3	49.4	52.4	
9.5	58.2	34.6	
9.5	16 2.2	35.8	
8.9	2.2	1.1	K
9.5	3.3	40.5	
8.0	29.9	58.4	K
9.5	33.8	31.5	
9.0	34.5	29.4	K
9.5	36.4	8.3	
9.3	17 24.7	4.3	
9.4	31.6	58.9	
9.3	18 49.2	45.3	αB
7.0	19 3.8	45.7	K
7.0	34.8	44.3	K
9.0	50.2	17.4	
9.1	20 34.7	5.7	a
8.8	21 25.8	37.8	
9.3	34.7	20.5	
9.4	39.3	7.2	αB
9.5	22 16.2	57.4	
9.3	44.7	27.3	
9.3	57.8	11.0	
9.5	23 6.5	50.4	
7.0	20.2	28.4	K
9.0	23.2	14.0	
9.5	27.3	28.4	
9.5	51.6	54.0	
9.5	54.2	32.6	
	+	+	
10pr.	*32.09*	*1.47*	

701—760					761—820					821—880					881—940					941—1000				
	4ᵘ		+6°			4ᵘ		+6°			4ᵘ—5ᵘ		+6°			5ᵘ		+6°			5ᵘ		+6°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.5	24	19.8	12.8		9.3	41	42.4	46.8		9.1	56	32.1	18.9	*a*	9.3	8	39.3	18.2		8.4	22	19.8	50.4	K
9.5	26	9.7	30.5		3.3		58.3	42.2	K	9.5		37.4	55.7		9.2		58.1	18.1		9.0		36.3	23.4	
8.0		13.3	57.5	Kb	9.0	42	4.8	15.8		9.0		44.1	37.5		9.2		59.3	23.8		9.0		51.5	12.5	
9.0		23.7	7.4		9.3		11.9	49.6		9.3		54.2	59.7	*aB*	9.3	9	13.6	30.3		9.0		59.7	58.8	
9.5		31.5	27.6		8.0		30.7	42.6	K	9.5	57	8.0	35.3		8.7		22.3	8.3	K	8.7	23	2.9	40.0	K
9.5		37.8	29.1		9.4		32.4	14.0		9.5		15.5	12.0		9.5		39.3	26.2		9.4		7.9	24.7	
9.2		50.7	12.2		9.3		42.8	35.2		8.7		19.8	1.4	K	8.7		49.6	59.3		9.3		17.0	20.6	
9.2	27	1.2	6.5		9.3	43	8.1	31.6		8.7		51.2	4.7	K	9.5	10	4.0	32.7		9.3		43.1	17.0	
9.0		33.3	22.1	K	9.2		9.7	11.8		9.0		51.5	15.7		9.5		24.0	39.6		9.3	24	8.7	39.0	
9.5		37.8	28.0		9.5		46.8	21.7		9.5	58	7.4	10.3		9.4		31.5	34.5		9.3		16.9	51.6	
9.5		45.2	57.4		9.5		48.5	47.8		9.5		15.9	49.5	*a*	8.0		39.2	35.7	*B*	9.5		22.4	44.1	*aB*
9.5		49.0	2.7		9.5	44	17.3	14.6		9.4		19.8	16.9		9.3		50.3	49.9	*a*	9.5		46.8	12.0	
9.5		58.6	56.8		9.5		38.8	8.7		8.6		27.6	51.1		9.5		51.9	24.8		9.3	25	3.3	41.8	
9.5	28	10.7	49.8		8.6	45	35.7	42.6		9.3		56.4	32.9		9.5	11	1.4	20.8		9.3		30.0	41.9	
9.5		33.8	57.1		9.5		47.8	27.7		8.4		59.6	13.4	K	9.5		28.4	10.5		8.5		31.0	4.3	K
9.5		49.7	47.4		9.0	46	14.3	12.0	K	9.5	59	1.1	18.2		9.5		44.6	13.7		9.5		42.3	15.9	
9.1		58.3	30.8	*ab*	9.5		17.5	40.8		9.3		20.5	0.3	*aB*	9.5		56.0	44.3		9.5		42.6	51.7	
9.2	29	2.3	49.8		9.5		39.8	42.6		9.5		24.8	32.5		9.3	12	1.9	14.0		9.3		45.7	57.5	
8.9		4.3	56.8		9.3	47	29.7	32.2		9.5		27.0	13.4		9.5		5.3	26.7		9.5	26	6.3	25.1	
9.5		12.0	3.7		9.5		58.8	14.8		9.4		36.0	6.0		9.4		10.1	27.7		9.5		27.6	18.9	
9.1		18.7	19.0	*a*	9.1	48	5.0	31.5	*a*	9.5		41.7	50.6		9.2		52.2	44.8	*b*	8.1		52.6	1.4	K
9.1		32.4	10.6	*a*	8.7		23.6	55.4	Kb	9.4		50.0	1.0		8.5		57.7	0.4		8.5		58.0	27.8	
9.1		40.1	49.6	*a*	9.4		46.1	39.2	*aB*	8.7	0	1.5	57.4	K	9.4	13	20.7	53.4		9.0	27	4.7	58.6	
9.3	30	11.9	52.2		9.5	49	4.0	4.3		9.5		2.8	26.1		9.0		21.5	3.9		8.4		35.1	39.7	
9.3		19.2	27.3		9.5		6.6	43.5		8.5		12.0	15.1	K	9.1		30.6	49.0	*a*	9.5		59.6	32.0	
9.0		23.7	19.0		9.5		30.5	59.7		9.5		19.6	46.4		9.5		39.6	17.9		9.1	28	7.2	19.4	*ab*
9.0		48.9	56.5		8.8		59.8	15.7	Kb	9.5		19.9	19.1	*a*	9.3	14	7.3	40.7	*aB*	8.9		12.0	55.6	
8.5		51.7	34.3	K	9.3	50	2.1	23.3		8.7		59.0	17.9		8.1		12.9	52.2	K	9.5		17.2	7.4	
9.5		56.7	38.4		9.0		5.8	35.8		9.3	1	1.1	57.7		9.4		13.8	40.7	B	9.0		26.9	33.0	
8.5		59.7	31.5	K	9.0		13.1	37.2		8.5		7.0	9.8		7.9		17.6	56.8	K	9.5		29.0	19.6	
9.1	31	29.2	44.7	*a*	9.5		33.1	33.1		9.5		41.0	33.7		9.4		18.9	39.3	*a*	9.1		40.9	44.7	*a*
8.5	32	11.6	59.1	K	9.2		42.1	53.2		7.7		55.6	59.9	K	8.4		30.7	52.8	K	9.1	29	19.1	28.2	*a*
8.9		19.8	4.6		8.8		49.2	11.2	K	9.0	2	7.0	53.3		9.2		56.8	8.0		9.3		29.0	36.7	
9.0	33	20.2	21.5		9.2		50.5	46.5		9.2		13.7	56.8		9.3	15	19.6	31.3		7.7		49.8	1.5	K
9.5	34	6.3	55.7		9.3		50.5	7.7		9.1		19.2	9.8	*a*	8.3		22.6	55.2	Kb	9.0	30	7.6	13.9	
9.5		23.6	10.8		9.5	51	18.4	55.5		9.4		38.3	3.3		9.4		24.6	5.4		8.9		10.1	10.6	K
9.5		52.1	25.3		9.5		24.8	38.6		9.0		54.4	22.0		9.5		47.9	28.6		9.5		17.7	26.8	
9.4		54.5	13.1	*aB*	9.5		48.5	12.3		8.7		56.9	43.1	K	9.0	16	6.3	6.6		9.5		33.4	31.2	
9.5	35	3.2	13.9	*aB*	9.5		59.3	52.3		9.3	3	25.6	23.4		2.0	17	21.8	12.7	K	9.5		34.3	4.2	
9.5		11.0	39.5		9.4	52	54.6	37.7		8.2		29.3	50.3	K	9.4		22.7	52.9	*B*	9.5	31	1.0	18.6	
9.2		12.9	18.2	*ab*	9.5	53	2.0	30.0		9.5		44.3	46.7		9.0		50.6	27.1		9.4		22.2	37.9	*a*
9.5		31.3	7.3		9.0		8.6	21.5		9.5		53.3	13.0		9.5	18	20.9	49.6		9.5		27.6	21.8	
9.5		54.8	23.1		9.5		11.0	36.0		9.5		59.9	55.7		7.1		50.5	44.4	K	9.3		30.8	20.0	
9.5	36	58.6	7.8		9.3		20.0	56.4	Kb	7.5	4	12.6	38.8	K	9.3		57.7	46.0	*a*	9.5		36.9	8.1	
9.5	37	7.3	4.5		9.0		20.1	3.0		7.9		19.5	40.2	K	9.5		58.0	14.9		9.5		39.1	37.5	*aB*
9.3		10.2	41.2		8.8		27.4	1.2		8.9		40.7	20.2		9.2		59.2	48.0		8.5		47.5	48.9	K
9.5		14.8	44.7		9.5		28.5	6.0		9.5		41.5	2.6		8.9	19	4.0	20.9		9.2		48.0	54.8	
9.5	38	0.5	30.1		8.8		54.1	56.1	K	9.5	5	1.3	28.0		8.9		24.2	50.9	K	9.5	32	6.2	18.7	
9.5		0.8	39.5		8.5		57.1	32.1	K	9.5		44.1	38.2		9.5		24.7	0.2		9.5		32.9	26.0	
9.0		2.3	51.5		9.2	54	0.0	26.1		9.2	6	9.1	56.5		9.5		52.3	8.7		8.3		34.1	35.7	K
9.5		31.2	47.1		9.0		12.1	53.5		9.5		34.7	21.4		9.3	20	1.5	21.1		8.8		36.6	40.4	
8.5		36.2	13.5	K	9.2		42.8	55.8		9.4	7	12.6	38.4		9.5		13.6	54.5		9.0		40.0	52.8	
9.5		39.2	15.6		9.3		55.8	41.0		8.5		13.4	6 3	K	9.2		21.1	12.1		9.5		45.2	43.5	
9.1	39	59.9	56.4	*aB*	9.3	55	7.5	12.3		9.5		19.3	16.2		9.5		54.3	34.1		9.5		51.9	51.8	*a*
9.5	40	25.0	14.2		8.8		10.5	27.5		9.5		22.7	24.0		9.5	21	38.5	18.7		9.3	33	28.0	24.6	
9.4		29.2	52.4		9.5		17.4	30.5		9.2		31.5	0.4	K	9.3		41.0	11.5		9.5		42.9	12.3	
9.5		50.1	3.0		9.5		21.4	30.0		8.2		36.7	53.7	Kb	9.5		44.0	18.1		9.3		58.9	38.8	
9.4		54.2	45.2		8.0		24.1	59.9	K	9.5		41.9	12.7		8.4		51.5	43.2	K	9.4		59.2	2.4	*aB*
9.3	41	23.7	53.8		7.4		58.8	26.1	K	9.5		44.5	46.2		9.5	22	0.1	58.3		8.5	34	5.8	31.8	K
9.4		36.8	17.3		9.5	56	26.3	41.1		9.5	8	19.6	14.3		9.5		16.9	15.0		9.1		19.2	32.0	*a*
		+	+				+	+				+	+				+	+				+	+	
10pr.		*32.13*	*1.26*		*10pr.*		*32.17*	*1.00*		*10pr.*		*32.19*	*0.85*		*10pr.*		*32.21*	*0.67*		*10pr.*		*32.23*	*0.46*	

1001 — 1060

m	5ª	+6°	
9.5	34′ 20.3	5.2	
9.2	24.2	7.1	
8.1	34.0	35.0	K
9.0	35 29.8	25.2	
7.4	48.2	49.3	K*b*
9.2	36 9.2	23.0	
8.2	11.3	51.4	K
8.0	17.0	27.1	K
9.3	37 0.9	2.8	
9.0	10.0	20.2	K
9.5	11.6	27.1	
7.3	13.9	16.5	K*b*
9.1	35.8	47.7	*a*B
7.4	38.6	13.2	K
9.5	44.9	29.6	
9.0	51.3	12.3	K
9.0	38 2.7	51.5	
8.9	3.0	33.9	B
9.0	5.5	46.2	B
9.5	11.2	40.1	
9.3	39 0.1	19.2	
9.4	11.4	52.8	
9.5	15.6	26.2	
9.3	33.6	36.4	
9.5	37.5	44.0	
9.4	46.4	59.5	
5.7	40 13.4	23.8	L
9.5	48.6	2.2	
9.5	54.8	25.5	
9.2	41 2.3	19.0	
9.0	9.4	36.8	
9.3	23.9	7.8	
8.8	41.0	51.2	K
9.5	48.6	35.7	
8.9	42 0.5	1.3	
9.3	7.9	51.3	
9.5	8.1	42.2	B
9.5	9.4	39.5	*a*B
9.5	13.4	44.1	*a*
9.3	27.2	59.6	
9.5	34.0	33.2	
9.5	43 6.2	5.7	
9.5	17.9	31.3	
9.5	22.6	39.3	
9.3	46.3	8.2	
8.9	48.0	46.6	K
9.1	59.8	33.8	*ab*
9.5	44 3.3	31.1	*R*
8.3	4.4	45.0	K
9.5	22.9	30.1	
7.5	41.7	10.1	K
9.5	44.9	25.9	
9.5	45 4.6	33.7	
9.0	7.7	5.6	K*b*
8.8	29.9	4.8	K
8.0	40.4	13.0	K
9.4	41.1	50.7	*a*B
9.5	50.3	12.5	
9.0	57.3	49.7	B
9.2	46 0.5	22.2	
10 pr.	+	+	
	32.24	0.28	

1061 — 1120

m	5ª	+6°	
8.5	46′ 4.3	30.0	K
9.0	18.0	40.9	
9.5	22.0	8.6	
9.5	34.3	34.1	
9.0	47 13.2	12.0	
9.3	29.1	53.0	
8.9	34.2	41.7	K
9.5	46.4	44.0	
9.4	48 9.0	59.6	
9.3	18.1	35.1	
9.5	39.4	16.8	
9.0	44.9	40.9	
9.3	49 3.9	57.2	*a*K
8.3	12.3	54.1	K
8.5	24.1	44.7	K
8.2	43.1	22.1	B
8.3	50 26.1	29.6	K
9.5	34.4	23.4	
9.5	51 15.6	33.0	
9.5	47.4	16.5	
8.5	56.2	45.4	R
9.5	52 27.1	14.2	
9.5	39.8	11.6	
9.5	43.5	55.3	
9.5	53 13.3	51.6	
9.5	17.7	33.6	*a*
8.5	26.9	37.2	K*b*
9.5	39.8	37.1	
9.5	57.6	9.7	
9.0	54 0.7	32.5	K
9.3	27.9	36.3	
9.5	44.1	55.7	
9.5	55 3.2	1.5	
9.3	24.9	28.9	
9.0	32.1	23.2	K
9.5	34.4	30.2	
9.5	40.8	49.3	*R*
9.3	54.7	36.8	
9.3	56.4	34.8	
8.5	56 29.8	29.0	K
8.5	30.6	34.0	K
9.3	50.4	33.0	
9.2	57 1.4	52.0	K
9.5	1.5	58.1	
9.5	4.9	49.4	
9.5	20.0	27.4	
9.0	34.7	17.4	
9.4	45.0	55.9	
9.5	57.4	46.3	
8.2	58 21.5	1.8	K
8.9	21.9	28.7	K
9.4	24.9	25.8	
9.5	27.0	27.7	
9.5	34.7	28.9	
9.5	45.4	59.3	
8.2	51.7	44.4	L
9.3	55.4	31.7	
9.5	59 1.6	0.9	
9.5	2.8	10.0	
9.3	7.3	28.4	
10 pr.	+	+	
	32.24	0.09	

1121 — 1180

m	5ª — 6ª	+6°	
9.0	59′ 12.9	42.8	
9.5	13.1	2.4	
9.0	17.9	37.2	
9.2	34.9	18.5	K
8.3	39.7	26.9	K
9.5	53.1	15.4	
9.5	0 4.5	43.0	
9.5	19.3	58.1	
9.3	26.8	52.5	
9.4	42.0	2.8	
9.5	1 15.8	15.5	
9.5	15.9	42.8	
8.8	17.3	46.5	
9.5	18.5	7.6	
9.2	23.6	15.8	
8.4	36.1	17.3	L
9.5	43.0	43.4	
9.5	2 0.3	12.6	
9.5	2.9	6.1	
9.5	15.9	9.9	
8.1	24.1	20.4	L
9.5	36.8	27.2	
9.5	41.2	34.0	
9.5	47.7	37.9	
9.3	55.5	26.4	
9.4	3 2.6	47.1	
9.5	8.8	23.4	
9.4	11.6	18.4	
9.3	15.1	25.6	K
9.5	24.9	45.1	
8.9	45.6	22.4	K*b*
9.5	54.6	19.3	*a*
9.4	55.4	7.8	*a*B
8.8	58.5	56.5	B
7.3	4 11.4	50.0	L
9.5	19.2	21.9	*a*
9.5	19.7	24.1	
9.5	58.6	48.0	
9.2	58.8	18.2	
7.0	5 13.7	2.7	L
9.2	38.2	24.1	*b*
9.5	45.0	25.4	
9.3	6 0.3	42.0	
9.0	0.8	5.9	
9.5	0.8	29.4	
9.5	7.3	5.3	
9.5	9.7	40.7	
9.0	42.0	37.4	
8.8	7 24.0	55.9	
8.5	27.5	32.8	
9.5	32.6	11.4	
7.3	54.0	6.4	K
8.5	55.3	35.6	
9.5	8 7.1	15.8	
9.5	13.2	42.1	
8.3	13.6	34.8	
9.3	45.5	38.7	
9.5	49.8	57.1	
9.5	50.9	1.0	
9.0	9 5.6	2.7	K
10 pr.	+	−	
	32.24	0.05	

1181 — 1240

m	6ª	+6°	
8.7	9′ 25.2	8.3	K
9.5	26.2	49.0	
9.1	26.6	54.7	*a*
9.5	39.8	37.7	
9.5	58.3	55.5	
9.0	10 6.3	44.2	K
9.5	9.4	59.0	
9.5	10.7	6.0	
9.4	12.1	8.9	*a*B
9.5	53.2	27.5	
8.3	58.5	47.0	K
9.0	11 8.9	59.9	K
8.3	18.3	9.0	L
9.3	22.7	37.4	
9.5	42.4	20.9	
9.1	43.3	53.9	K
9.5	44.5	42.0	
9.5	12 12.3	44.5	
9.5	13.4	50.0	
9.3	14.8	21.9	
9.5	17.0	27.7	
9.5	40.6	3.2	
9.5	51.1	35.0	
9.5	52.7	15.8	
9.5	55.1	59.0	
9.4	13 15.2	25.0	
9.1	28.1	49.6	*a*
8.8	38.0	31.9	
9.5	43.8	11.6	
9.5	45.9	36.9	
9.5	47.0	42.3	
9.2	56.7	17.6	*b*
9.3	14 30.0	54.2	
9.3	33.8	57.4	
8.7	46.6	32.8	
9.5	50.0	25.0	
9.5	57.4	53.0	B
9.0	15 5.7	47.2	
9.5	8.4	59.0	
9.5	9.8	44.1	
9.5	25.3	22.9	
9.3	32.6	27.9	
9.5	34.8	39.7	
9.1	58.5	5.6	*a*
9.5	16 23.1	3.7	
9.5	24.4	49.1	
9.5	25.8	15.0	
9.4	30.7	10.0	B
9.0	57.7	54.5	K
9.3	17 12.2	24.6	
9.5	18.9	41.7	
9.5	19.9	23.5	
9.4	37.2	54.2	*a*B
9.0	39.1	54.7	K
8.8	48.1	27.4	K
8.3	49.7	21.8	K*b*
9.5	54.0	15.9	
9.3	18 7.2	59.8	
9.4	17.8	56.2	
9.2	27.5	43.7	*a*
10 pr.	+	−	
	32.24	0.20	

1241 — 1300

m	6ª	+6°	
9.5	18′ 56.0	30.1	
9.0	19 2.0	25.7	K
9.2	2.5	51.8	
9.5	15.9	53.2	
9.3	25.5	44.5	
8.5	26.9	35.8	K
9.5	29.4	30.8	
9.5	32.2	34.6	
9.0	36.8	58.5	K
9.5	38.2	11.1	*a*B
9.5	38.6	19.2	
9.4	43.0	54.9	
7.8	20 18.1	0.5	K
7.9	24.7	2.4	K
9.5	40.9	56.6	
9.0	21 0.7	16.8	B
9.5	3.1	38.0	
9.0	4.0	51.0	
9.4	23.2	53.9	
9.5	53.3	28.1	
9.5	59.2	28.7	
9.4	22 0.2	40.0	
9.5	5.6	18.5	
9.0	8.6	15.0	
9.4	14.4	0.1	
8.5	19.2	59.0	
9.3	31.0	27.6	
9.5	33.4	59.9	
9.4	38.3	55.7	B
9.5	57.5	25.9	
9.3	23 3.3	25.3	
9.5	10.0	29.8	
9.0	33.5	26.0	
8.8	48.2	34.4	
9.3	49.7	16.0	
8.0	58.3	52.9	*B*
9.3	24 10.0	53.1	L*b*
8.0	21.8	8.3	
9.5	38.6	9.3	
9.5	25 10.5	16.5	
9.5	11.7	51.8	
9.3	14.8	24.6	*a*B
9.4	51.9	20.3	*a*B
9.1	53.3	4.3	*ab*
9.5	26 22.4	27.5	
9.4	22.8	34.1	
9.3	25.5	46.8	
8.0	35.1	48.0	*B*
9.5	46.9	11.0	
9.4	27 3.0	26.4	
9.3	3.0	47.2	
9.5	8.6	27.4	
9.3	20.0	20.9	
9.2	21.7	40.7	
9.0	38.6	24.7	
9.5	46.4	5.9	
9.4	28 5.6	37.4	*a*B
8.6	6.7	32.7	
9.4	13.2	37.9	
9.3	15.0	56.6	
10 pr.	+	−	
	32.24	0.33	

1301—1360					1361—1420					1421—1480					1481—1540					1541—1600				
	6ᵃ		+6°			6ᵃ		+6°			6ᵃ		+6°			6ᵃ—7ᵃ		+6°			7ᵃ		+6°	
m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′	
8.8	28	18.0	30.0		9.5	35	35.5	37.1		9.5	45	29.1	35.9		9.4	53	30.2	14.3		9.2	2	19.6	25.3	
8.6		36.5	21.5		9.3		39.8	30.0	aB	9.5		32.5	32.2	aB	9.5		31.4	23.1		8.9		20.4	19.8	B
7.6		40.9	12.3	L	9.0		47.6	4.8		9.5		43.3	22.4		8.5		50.4	40.8	K	9.2		28.8	41.4	
9.5		43.7	54.5	aB	9.5		55.0	11.0		8.8		56.3	59.6	K	9.4		54.0	57.1		9.5		30.2	49.6	
9.2		50.6	5.0		9.4		58.1	58.5	aB	9.5	46	5.8	39.2		9.5		56.7	59.8		9.0		34.0	2.1	
9.5		51.7	48.2		9.5	36	5.4	54.3	aB	8.3		14.4	59.5	K	9.5	54	12.9	13.5	aB	9.5		37.1	38.9	
9.5	29	1.1	58.8		9.5		12.0	31.7		7.6		18.3	51.3	K	9.4		14.4	36.6		9.0		37.6	31.5	K
8.5		24.6	10.5	L	9.2		17.3	23.2		8.2		26.5	51.8	K	9.4		30.6	17.0	aB	8.3		44.2	18.6	K
6.5		38.1	15.5	Lb	8.7		23.0	20.1	L	9.5		33.9	29.4		9.5		37.5	29.1		8.6		49.8	3.5	K
9.3		45.4	3.4		8.2		38.7	25.9	L	9.2		39.7	18.9	b	9.5		48.6	56.8		9.5	3	0.2	51.7	
8.5	30	0.5	36.6		9.5		43.3	32.8		9.5		48.2	38.1		9.4		57.3	6.3		9.4		3.7	14.9	aB
9.0		3.6	48.3		9.5		45.8	13.8		7.9		52.9	54.0	K	9.4	55	2.8	33.8		9.4		6.0	54.7	aB
9.5		17.5	27.5		9.3		59.2	50.8		9.5	47	2.9	37.6		9.1		7.3	37.1	a	9.2		13.3	40.5	
9.2		28.8	39.7		9.0	37	2.0	30.2		9.5		12.4	8.6		9.5		8.5	13.8		9.0		24.0	56.8	
9.3		30.3	30.8		9.3		16.6	12.0		9.5		14.8	42.0		9.5		18.5	30.5		9.3		27.9	20.5	aB
8.6		32.9	6.5	K	9.3		59.2	38.0		9.2		20.0	2.5		9.5		26.8	5.0		9.0		41.3	27.2	
8.2		34.6	26.1	K	9.3	38	3.3	34.0		8.4		32.9	5.3	L	9.5		41.1	11.4		9.3		46.8	26.3	
9.4		42.9	47.0		9.5		10.0	7.8		9.2		41.5	27.5	K	9.5		43.5	25.8		9.3		49.9	6.2	
9.5		45.1	58.0		9.2		14.2	51.3	b	9.3		43.0	42.2		9.5		44.5	29.8		9.5		51.5	32.8	
9.5	31	2.2	19.1		9.5		23.8	2.8		9.1		57.2	23.4	a	9.5		48.5	34.7		8.4		56.9	59.3	Kb
9.5		8.9	6.9		9.5		36.3	24.5		9.1		59.8	7.5	a	8.7		49.0	52.2		8.9	4	17.6	35.6	
9.4		11.5	2.1		9.5		38.2	20.2		9.5	48	35.9	17.7		9.5		57.1	13.7		9.5		33.8	5.6	
9.5		23.1	35.3		9.0	39	12.2	5.5		8.5		39.9	11.5	K	8.5	56	7.1	4.6	L	8.9		38.0	58.9	
9.4		29.3	29.8	aB	8.7		59.8	27.5	L	9.2		40.9	39.7	B	9.3		31.2	27.0		9.5		44.5	53.0	
9.4		30.0	53.3		8.1	40	10.4	54.6	B	9.5		43.2	19.0		9.3		40.2	8.9		9.2		47.3	56.5	a
9.5		37.6	11.5		9.5		11.2	23.0		9.0		43.2	50.5	B	8.8		49.9	30.8		9.3		53.2	58.9	
9.4		38.8	5.6		9.5		28.3	7.8		9.2		51.6	54.5	a	9.3		51.7	18.6		9.4		57.0	1.2	
9.1		47.3	14.5	K	9.3		34.9	16.1		9.2		57.5	40.1	a	8.1		56.8	8.5	K	8.8	5	31.4	2.5	K
9.5		48.2	24.1		8.0		37.4	21.8	L	9.3	49	9.4	52.6		8.6	57	0.0	51.9		9.5		37.1	36.9	
9.5		48.6	35.3		9.5	41	24.5	49.8		9.5		9.5	22.6		9.5		23.3	52.3		9.5		42.1	6.9	
9.5		53.0	36.0		9.3		32.6	44.5		9.5		12.3	34.4		9.5		40.2	54.0		9.0		56.0	36.8	
9.5		57.6	35.6		9.5		34.3	38.0		9.3		15.0	52.9		9.2	58	1.0	4.5		9.3		56.5	47.7	
9.4	32	4.5	4.7		9.5		39.3	16.3		9.2		28.3	43.7		9.5		6.1	52.2		9.5	6	8.6	0.4	
8.5		8.1	11.1	K	9.5		54.6	39.9		9.3		41.2	1.3		8.3		13.8	6.5	K	9.2		8.7	12.7	
9.5		25.1	54.3		9.3	42	5.0	13.7		9.3		47.4	47.8		9.5		17.0	36.7		8.8		20.3	37.0	
9.5		38.0	44.7		9.5		12.3	23.0		9.2		58.2	7.2		8.3		18.9	20.3	K	9.4		21.0	56.6	
9.5		40.3	53.2		7.8		19.8	24.8	B	9.3	50	4.4	38.5		9.0		37.2	16.9	K	8.8		28.9	59.4	
7.0		44.9	30.2	L	9.3		21.4	47.8		9.5		5.3	13.3		9.5		42.5	48.5		9.0		32.2	8.5	K
9.5		51.8	52.8		9.5		25.7	9.5		8.0		8.5	44.5	B	8.5		46.7	21.4	K	9.5		37.4	31.4	
9.1	33	0.2	48.6	a	9.5		32.0	20.4		9.4		16.2	59.6		9.2	59	7.1	19.2	K	9.4		52.2	46.8	
9.5		4.0	1.8		9.5		34.6	10.7		9.0		35.8	5.9		9.3		12.2	24.5		9.4	7	2.2	5.8	
9.5		6.5	26.2		9.5		35.5	44.3		var		37.4	21.4	L	9.2		16.4	10.2		8.9		10.7	50.3	K
9.5		18.6	34.5		9.4	43	7.7	53.4		9.3		40.5	51.4		9.5		24.7	52.1		8.4		14.7	58.3	K
9.3		21.8	10.6		9.5		9.8	48.4		9.1		48.5	52.1	a	9.5		36.7	11.2	B	8.7		18.0	19.8	
9.5		35.4	52.8		7.5		15.2	0.7	K	9.5		52.2	3.2		9.5		44.5	39.3		7.7		30.6	4.3	B
7.7		44.4	14.6	L	9.5		29.3	28.7		9.3		55.9	37.0	B	9.1		53.9	35.0	ab	8.5		43.9	52.3	K
9.3		48.8	19.9		9.1		34.1	32.5	a	9.3	51	8.8	46.3	aB	9.5	0	2.6	28.4		8.5		53.7	10.3	B
9.3		49.5	42.8		9.2		47.6	44.3		9.5		20.1	53.8		9.5		3.2	26.7		9.5		59.6	51.9	
9.4		58.6	53.5		9.3		52.6	18.5		9.5		25.5	15.4		9.5		6.1	50.0		8.5	8	16.6	10.4	B
9.5		59.2	57.0		8.9		54.2	11.6	K	9.5		36.2	9.5		9.1		10.4	18.1	a	9.3		33.5	30.3	
7.3	34	12.6	28.5	L	8.0	44	7.0	46.5	Kb	8.9		51.0	6.8		9.5		21.9	56.4		9.0		40.8	55.2	
9.5		39.1	53.1		9.5		15.5	56.8		9.4	52	4.2	29.7	aB	9.1		25.0	14.0	K	8.3		42.4	27.2	L
9.5		41.1	50.9		8.7		27.1	40.5	K	9.3		6.2	24.7		9.3		39.6	9.3		9.5	9	26.9	35.9	
9.4		44.8	47.1		8.7		30.0	49.8	K	9.2		8.7	19.4	aB	9.1		43.9	14.3	K	6.9		32.8	56.0	L
9.5		48.4	2.7		9.5		39.7	43.6		9.5		15.4	12.1		9.5		50.0	35.6		9.4		42.0	39.7	
9.4	35	14.3	29.8	aB	8.5		41.9	23.2	K	9.5	53	1.5	52.5	a	9.0	1	2.1	45.4		9.1		43.3	3.5	a
9.5		21.1	31.1		8.5		[illegible].8	40.2	K	9.4		6.6	49.2	aB	8.9		21.6	36.4	K	9.4		46.2	58.1	
9.2		27.7	23.8		[illegible]	45	10.4	4.5		9.3		11.4	58.0	B	8.3		37.5	39.6	Kb	9.5	10	2.0	41.8	
9.1		29.6	51.7	ab	[illegible]		[illegible].8	53.3		8.8		16.0	49.1	K	8.9		42.9	8.8		9.4		31.3	35.7	
8.5		30.3	15.8	L	9.5		22.3	49.3		9.5		22.1	3.9		9.5		45.4	39.2		8.5		31.6	33.4	B
10pr.			+ 32.23	− 0.46	10pr.			+ 32.22	− 0.60	10pr.			+ 32.21	− 0.71	10pr.			+ 32.19	− 0.83	10pr.			+ 32.18	− 0.95

1601—1660					1661—1720					1721—1780					1781—1840					1841—1900				
	7ᵃ		+6°			7ᵃ		+6°			7ᵃ		+6°			7ᵃ		+6°			7ᵃ—8ᵃ		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	10	32.0	59.6	α	9.5	17	58.7	51.5		9.3	27	27.3	45.0		9.0	39	49.8	40.6		8.5	51	21.2	42.6	
9.5		32.5	53.5		9.5	18	1.3	19.0		9.3		30.2	50.9		9.5		50.1	14.6		9.2		58.5	52.5	
9.4		36.0	34.6	αB	8.0		6.2	59.5	B	8.8		40.5	0.0		8.5	40	37.9	39.6		9.0	52	0.0	23.0	K
9.5		37.0	33.0		9.5		47.8	26.4		9.0		59.9	29.4	K	9.4		43.4	13.8		9.0		7.2	50.4	
9.5		40.8	34.1	αB	9.5		52.0	12.3		8.3	28	20.0	32.8	K	9.5		46.2	27.0		9.2		21.5	57.1	
9.3		48.3	6.1		9.5		55.9	55.2		9.5		32.2	18.8		9.3		50.3	9.5	αB	9.5		34.5	31.8	
8.8		50.2	13.3		9.5		58.5	17.2		9.3		36.7	37.3		9.2		56.0	48.5	b	9.5		41.9	5.6	
9.4	11	2.3	59.1	αB	9.5	19	1.4	54.4		8.8		48.0	27.7	K	9.0	41	23.9	26.8		9.2		48.2	27.4	αB
8.8		17.1	52.0		9.5		4.0	53.3		6.7		51.6	10.5	L	8.4		24.8	6.3		8.8		48.6	15.4	K
8.5		27.2	36.9	K	9.4		5.8	26.9		9.0		54.2	52.6	K	8.3		48.2	0.9	K	9.2		53.8	5.5	
9.0		34.7	43.9	K	9.5		23.5	48 9		8.2	29	3.9	23.5	K	8.5	42	19.4	35.2		9.4		57.3	27.7	αb
9.2	12	1.2	35.9	K	9.5		30.8	35.0		9.3		27.2	42.8		8.0		40.3	6.3	Kb	9.5	53	40.9	29.7	
8.5		4.2	45.6	K	9.4		40.9	26.5		9.3		27.7	48.1		9.5		40.5	21.1		9.4		43.6	48.1	
9.5		13.3	24.8		8.6	20	9.0	12.5	B	9.5		42.8	57.1		9.0		49.8	41.0		9.3		46.7	39.6	
9.5		17.2	55.3		9.5		9.6	46.8		9.0		53.5	49.1	K	7.7	43	6.3	12.9	K	9.5		59.9	49.3	
9.4		32.3	19.9	αB	9.2		13.8	4.6		9.5	30	5.1	2.9		9.5		24.1	11.9		9.0	54	21.6	33.1	
9.5		32.7	45.1		8.7		23.5	38.4		9.3		22.2	33.1		8.7		29.9	18.3	K	9.5		36.8	51.4	
9.5		35.5	0.4		9.1		26.4	47.0	α	9.3		29.0	58.0		9.3		56.4	44.0		8.6		37.3	59.8	L
9.3		38.2	31.4		9.5		27.2	13.3	αB	9.3		37.9	8.2		9.0	44	2.8	11.2	K	9.5		49.8	53.1	αB
9.3		58.4	46.3		9.5		29.7	2.0		9.3		40.2	36.6		9.3		4.3	51.4		9.5		49.8	49.6	
7.9	13	12.1	30.3	K	9.2		32.3	54.2		9.5		46.0	44.6		9.1		8.8	37.5	αBb	9.5	55	24.0	29.8	
9.4		41.9	5.4		9.5		49.9	35.0		9.3		57.2	18.8	αB	9.3		37.3	4 6		9.4		26.9	0.5	
8.8		42.6	13.1	K	9.4	21	1.6	36.7	αB	9.5	31	16.3	4.9		9.3		41.0	12.4		9.5		39.6	7.7	αB
9.3		50.7	40.6		9.5		2.6	40.1		9.4		46.3	9.7		9.2		44.3	37.7		8.2	56	7.5	43.9	K
9.5		51.8	21.7		9.5		19.8	50.2		9.4	32	14.7	6.6		9.4		46.4	36.0		9.5		8.8	18.8	
8.9		55.5	51.1		9.5		30.0	46.8		8.9		17.7	0.6		9.1		55.2	42.3	α	9.5		11.0	10.8	
9.4	14	9.9	9 6		9.2		32.1	33.9		9.3		22.1	25.0		9.5	45	11.7	30.7		8.3	57	4.6	35.7	K
8.9		10.6	58.8		7.2		32.9	52.5	K	9.0		22.6	44.8		9.3		19.2	10.3		9.4		14.6	8.5	
9.4		19.0	49.1	αB	9.5		34.3	41.8		9.5		42.2	22.8	αB	8.8		40.3	44.2		8.0		42.3	14.1	L
9.5		19.5	50.6		8.5		45.4	57.2	K	8.4		54.9	58.3	K	9.3		46.9	56.0	αB	9.3	58	2.2	31.1	
9.3		47.6	35.2		8.6	22	30.5	19.1	K	8.5	33	0.0	8.2		9.5	46	6.4	44.9		8.9		17.4	24.1	K
9.3		48.3	39.2		9.1		30.9	0.2	α	9.3		3.1	5.2	αB	9.3		21.5	14.6		8.8		51.2	47.5	K
8.6		59.8	11.9		9.2		32.0	3.4		9.0		11.0	55.3	B	9.4	47	9.0	26.1	αB	9.0		53.2	56.8	
9.5	15	0.7	13.3		9.0		34.4	16.7		9.5		12.8	35.2		9.3		11.8	26.3	αB	9.5	59	37.1	30.6	
9.2		4.6	28.9		9.4		46.7	18.3		9.4		13.1	5.8	α	9.3		25.3	17.8		9.5		41.7	34.0	
9.5		4.6	30.0		8.5		52.2	6.9	K	9.5		14.9	30.3		9.5		39.5	28.3		9.5	0	0.0	9.8	
8.1		7.0	38.7	B	9.5		53.6	57.7		8.7		20.5	26.8	B	9.5		39.6	33.8		9.5		5.4	6.1	
9.5		27.4	34.8		9.2	23	2.0	39.8	B	9.5		29.2	57 3		9.5		47.9	47.2		9.5		10.3	43.8	
9.4		33.5	48.1		9.2		6.5	2.1		9.3		40.6	0.8	αB	9.5		49.3	50.5		9.5	1	5.0	47.5	
9.5		35.7	43.5		8.5		9.3	16.1	K	9.5		43.7	59.3		8.8		53.5	11.8	K	9.5		13.6	55.5	
9.5		39.3	3.8		9.3		22.1	43.0		9.3		54.0	22.1		9.2		59.8	21.8		7.7		49.3	21.0	Kb
9.4		39.3	49.4		9.4		45.9	17.0		9.4		57.0	10.7		8.7	48	7.4	27.0		9.4		58.3	50.2	αB
9.2		43.5	3.0		9.5		46.0	3.9		9.2	34	15.3	50.1		8.1		13.0	53.8	B	9.2	2	5.3	49.9	αB
8.7		52.8	57.5		9.1		46.0	41.9	ab	8.8		48.5	58.8	K	8.7		13.3	12.1	K	8.7	3	20.0	15.1	
8.5	16	19.4	40.2		9.3	24	10.7	44.3		9.5	35	25.6	23.8		9.4		15.0	59.6		8.7		25.3	46.8	
9.0		33.0	4.3		8.8		21.8	10.5		9.5		28.1	33.0		8.5		33.2	11.8	K	8.5		31.6	49.5	K
9.5		40.3	41.4		9.2		34.3	24.5		9.3		34.4	58.8		9.0		36.4	56.5		8.3		46.7	26.9	B
8.0		43.4	25.7	L	9.4		35.6	28.1		8.3		53.0	37.3	L	8.2		47.1	47.3	K	9.5		54.2	24.0	
9.5		44.0	41.5		9.4		48.2	47.7	αB	9.4		56.7	33.0		9.3	49	24.5	16.4		8.2		54.7	35.8	B
9.5		52.6	32.3		8.8		50.5	9.9		9.0	36	48.5	35.6	K	8.8		46.4	34.6		9.5	4	6.1	24.9	
9.4		54.1	36.8	αB	9.5		52.1	12.8		9.3		51.8	13.5		9.4		52.6	38.8		8.5		8.6	13.1	Kb
9.2	17	2.0	55.5		9.5	25	2.5	54.1		9.1		56.4	20.6	ab	8.8	50	2.7	47.6	K	9.5		22.6	7.9	B
9.4		5.9	58.0		9.0		26.0	44.0		8.5	37	8.4	36.1	K	9.4		10.7	54.5		9.5		26.0	9.4	B
9.2		9.0	53.5		8.0		52.2	57.8	B	9.5		20.7	50.2		9.5		12.5	28.0		9.5		28.5	6.9	
9.4		11.5	46.1		9.0	26	7.0	8.2	K	8.8	38	21.1	43.3	K	9.6		14.8	0.3		9.5		32.0	11.0	
9.5		12.4	1.7		9.3		11.4	10.0	K	8.5		27.4	35.1	K	9.3		34.1	51.8		9.5	5	0.8	3.0	
9.5		17.1	48.6		9.3		33.3	51.5	αB	8.8		42.3	49.2		9.0		53.5	36.3		9.5		37.9	9.3	B
9.3		37.4	3.0		9.1		51.8	5.7	α	8.2	39	15.7	24.2	Kb	9.3		55.8	7.6		9.4		47.0	11.8	
9.5		38.7	24.1		9.3	27	9.6	0.9	α	9.2		35.4	24.2		9.2		58.6	28.6		9.5		48.9	17.9	
9.2		46.6	14.2	b	8.0		18.0	30.5	K	9.4		44.0	21.9		7.4	51	3.4	1.0	L	7.3	6	8.5	44.3	Kb
		+	—				+	—				+	—				+	—				+	—	
10pr.		32.16	1.07		10pr.		32.14	1.17		10pr.		32.12	1.32		10pr.		32.08	1.49		10pr.		32.05	1.65	

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	8ᵐ		+6°			8ᵐ		+6°			8ᵐ		+6°			8ᵐ—9ᵐ		+6°			9ᵐ		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	6	42.0	22.7		9.3	20	25.3	20.6		9.5	35	26.8	41.5		9.3	52	16.5	41.5		9.0	9	28.4	34.0	
8.9		45.8	2.8	B	8.7		47.4	32.1		9.5		42.8	29.0		9.5		38.8	46.7		8.8		50.2	3.6	K
9.5		55.1	47.7	aB	8.5	21	0.0	36.6	K	9.5		45.9	5.9	aB	8.8	53	2.4	57.0	K	9.3	10	5.5	26.3	
9.5	7	8.8	28.3		9.3		11.1	48.9		9.3		56.8	15.9		8.8		16.2	34.6	K	9.5		28.4	30.5	
9.3		10.0	39.2		9.2		29.7	37.0		9.1	36	11.4	2.8	a	9.5		20.4	14.2		9.5		44.0	40.9	
9.5		20.5	32.6		9.0		45.4	29.0		8.8		25.9	13.4		9.5		38.8	1.4		9.3	11	8.9	13.1	
9.5		44.9	31.7		9.0		49.0	57.1		9.5	37	1.5	47.8		6.5		52.2	12.4	K	9.3	12	26.6	20.8	
9.2	8	5.8	1.4		9.3		55.6	49.2		9.5		14.8	39.9		9.0		55.6	4.3	K	9.5		34.5	35.4	
9.3		6.6	16.7		9.3	22	21.5	55.7		9.0		19.5	53.6		8.0	54	10.7	13.5	K	9.3		42.4	13.2	
9.5		12.0	8.3		8.9		29.1	14.8		7.0		21.7	11.8	L	9.3	55	10.5	36.3		9.5		52.4	37.1	
9.5		25.5	5.0		9.3		34.1	48.0		9.3		51.8	42.9		9.0		11.6	33.2		9.5	13	10.5	9.4	
9.5		26.3	45.6		9.4		44.0	23.0		9.1	38	5.0	12.6	K	9.2		16.5	5.9		9.5		38.5	44.7	
9.3		32.1	9.2		9.5		45.4	26.3		9.4		18.6	57.8		9.5		40.2	13.3	aB	8.3		43.0	7.6	K
9.0		34.2	34.0	K	8.5		53.5	53.9		9.5		37.6	57.4		9.5		44.4	25.4	aB	9.0		57.4	35.3	
8.3		37.6	43.8	K	9.5	23	12.1	32.9		9.5	39	0.8	19.7		8.8	56	30.8	21.8		8.0	14	29.1	11.7	K
9.4	9	4.2	39.4		9.2		27.9	9.2		3.5		6.4	56.9	K	9.3		56.8	53.5	a	8.8		30.5	44.0	K
9.5		4.4	33.3		8.8		46.1	50.9	K	9.5		19.1	13.1		9.3	57	7.0	21.8		8.4		38.2	54.7	K
9.5		13.7	0.9		9.5		59.5	28.3		9.0		19.2	41.9	K	9.5		9.5	59.7		9.5		43.4	46.4	
7.3		54.2	42.0	K	9.0	24	3.2	46.7	K	9.5		47.8	20.4		9.5		33.2	32.3		9.4		59.0	51.0	
9.0		57.8	28.0		9.3		5.5	21.8		4.8	40	46.2	22.2	L	9.5		36.5	53.7	a	9.5	15	15.0	37.5	
9.5	10	12.2	6.9		8.8		6.9	5.4	K	9.0		53.9	52.4		9.5		56.0	5.8		9.1		32.4	9.5	a
9.0		12.7	55.4	S	9.3		27.4	14.5		8.3	41	27.7	30.0	L	9.5	58	37.8	22.1		9.3		47.0	5.7	
7.0		15.8	40.3	K	7.5		56.4	11.8	Kb	8.8		38.1	25.2		9.5		48.1	3.6	aB	8.5		48.9	24.6	K
8.5		38.6	26.7		9.5	25	10.5	28.4	a	8.8		39.5	35.9		9.0		50.8	49.8		9.5		54.9	58.8	
9.3		59.5	18.4		8.8		13.3	59.4	K	8.5		42.1	14.8	K	9.2	59	19.0	3.9		8.8	16	17.5	20.9	K
9.5	11	3.3	49.1		9.0		29.1	25.2		9.0	42	17.9	0.5		9.5		46.8	18.3		9.2		22.5	13.3	K
9.3		21.9	22.1		9.5		41.6	0.6		9.5	43	5.1	53.0	aB	8.5		49.0	54.2	K	8.5		35.4	16.4	K
8.7		27.8	8.1	K	9.3	26	6.5	43.9		9.4		34.2	52.7	aB	9.5	0	30.9	4.7		9.3		45.2	23.3	
8.9		52.4	5.6	K	9.3		31.1	8.1	B	9.4	44	10.2	56.7		8.0	1	23.5	11.4	K	7.2		50.8	57.7	K
9.4		54.7	32.9	aB	9.0	27	16.8	14.1		9.0		24.5	51.7		9.3		37.9	48.4		9.1	17	15.5	14.6	K
9.5	12	21.2	20.0		9.5		36.7	57.3		8.7		59.8	20.0		9.5	2	5.9	15.2	a	9.5		19.4	37.2	
9.0		39.1	6.8		9.5	28	24.8	22.3		8.7	45	17.5	43.9		9.3		49.3	36.4	a	9.1		21.5	15.0	K
9.5		43.8	21.5		9.5		39.1	53.7		9.1		50.4	5.4	a	9.0		55.0	13.6		7.7		42.3	52.2	Kb
9.5		55.1	33.0		9.5		47.6	36.0		9.5	46	6.1	26.0		8.9		59.5	15.2	K	8.9	18	23.0	24.4	
9.0	13	13.7	59.1	K	9.3	29	23.3	26.0	a	9.5		11.3	15.2		8.5	3	4.6	56.3	K	9.0	19	12.2	35.4	K
9.0		14.2	56.2	K	8.5		33.5	30.0	K	8.7		11.7	53.1	Kb	9.3		20.1	27.4	a	9.3		27.4	48.2	
9.3		19.8	10.4		9.3		34.0	10.7		7.9		51.4	0.9	K	9.5		39.9	35.0		7.3		39.5	51.0	K
9.5		22.9	17.0		9.0		37.1	27.9	K	9.3		58.5	42.2		9.5		41.1	18.4		9.5		50.3	58.5	
9.3		26.4	9.8		9.5		44.7	38.9	aB	9.5	47	2.0	1.2		9.2	4	18.7	32.4		9.1	20	26.4	26.7	a
9.5	14	15.3	58.8		9.3		50.4	37.4	aB	3.0		43.1	29.5	K	7.0		19.1	3.5	K	8.0		37.0	31.6	K
9.0		33.1	27.0		4.5		59.1	13.4	K	7.9		46.7	7.0	B	9.4		26.7	33.8		8.8	21	14.7	48.9	K
9.0	15	14.4	37.6	K	9.3	30	6.6	34.8		9.0		53.5	59.9		9.4		37.1	26.3		7.7	22	23.4	16.3	Kb
9.5		15.0	12.1		9.3		13.1	53.9	aK	8.9		56.2	42 1	B	9.5		48.4	24.7		9.3	23	10.4	21.1	
9.5		25.2	4.4		9.0		30.5	18.6		9.5	48	12.2	50.2	K	9.2		50.3	1.2	K	8.7	24	3.3	51.0	K
9.4	16	4.0	8.7		8.5		33.2	53.1	Kb	9.1		13.4	34.6	a	9.4		59.9	5.7	a	8.8		36.0	55.7	K
9.5		19.1	15.7	aB	9.5	31	32.8	33.2		9.5		45.5	38.5		9.5	5	33.7	4.5		9.5		51.3	9.2	
9.3		20.4	23.0	aB	8.0	32	1.2	17.0	K	9.3		46.5	42.5		9.3		37.8	33.6		8.8		59.7	32.5	K
8.9	17	0.1	37.7		8.8		2.4	17.4	K	9.5	49	6.8	33.9		9.5		42.0	15.5		9.5	26	0.3	21.7	
9.3		1.5	3.3		9.5		19.5	4.5		9.3		31.3	11.8	aB	8.0		43.0	24.6	K	8.8		5.6	9.8	K
9.4		11.6	9.1	aB	9.5		26.8	35.3		8.8		37.5	22.5		8.7		55.2	32.9	K	9.5		59.5	18.2	
9.0	18	5.6	25.4		9.5		56.8	39.5		8.5		55.5	27.4		8.5	6	25.7	31.1	K	9.5	27	2.5	15.2	aB
8.8		11.3	44.1	K	9.5	33	54.0	18.9	aB	9.5	50	14.9	57.9		9.5		27.1	53.1		9.5	29	44.3	26.0	
9.3		43.6	15.7		9.5	34	27.3	40.2		9.3		23.6	13.8		9.3		30.7	55.9		8.8		47.7	29.9	
9.3		46.0	23.1		9.2		29.9	38.7	aBb	9.5		43.0	34.7	B	8.8	7	4.7	45.4	K	9.3	30	24.4	57.8	
9.3	19	2.2	27.6		9.1		34.5	23.5	a	9.5	51	5.3	1.0		9.2		38.2	37.4	aB	9.2		38.3	17.1	b
9.2		2.9	6.8	b	9.3		58.2	46.6		9.5		7.8	22.9		8.5		39.0	7.0		9.5		59.6	8.7	
9.1		13.0	36.9	a	8.8		58.9	3.8	B	9.5		25.5	52.3		8.8	8	23.4	42.4	K	9.5	31	32.2	1.7	
8.8		28.8	45.8	K	9.5	35	10.5	8.5	aB	8.9		39.6	18.2	B	9.2		42.6	1.8		*8.9	32	57.8	18.4	
9.3	20	14.6	5.0		9.5		19.1	4.9	a	8.7		51.4	55.2	K	9.0		54.0	0.5		9.5	33	48.2	52.0	
9.5		22.2	12.0		9.5		26.5	19.7		9.5		51.8	9.7		9.0	9	10.5	24.6	Kb	9.3	34	39.7	8.6	
10pr.		+ 32.00	− 1.83		10pr.		+ 31.94	− 2.00		10pr.		+ 31.87	− 2.20		10pr.		+ 31.79	− 2.38		10pr.		+ 31.71	− 2.53	

2197ᵐ		
9.5	31	43.6	51.4

2201—2260 9ᵐ +6°

m	′	″	′	
9.4	34	52.8	39.0	
9.5	35	3.4	17.7	
9.0		9.3	30.2	K
9.1		20.1	6.3	*ab*
9.5		34.0	13.2	
8.3		51.4	52.4	*Lb*
9.3	36	26.4	5.7	
9.5		55.7	17.0	*a*
9.2	37	15.2	7.3	*b*
9.2	38	59.5	56.7	*b*
9.0	40	1.0	14.2	K
8.8		4.5	13.4	K
9.5		44.7	55.2	
9.3	41	15.2	42.7	*b*
9.2		43.3	42.0	*b*
9.5	42	12.3	56.9	
9.5		16.0	37.9	
9.5		31.6	32.1	
9.3	43	1.6	31.8	
9.5	44	39.7	17.4	
9.1		56.1	57.3	K
9.5	45	7.8	54.3	
9.3		44.3	33.4	B
6.5	46	6.1	38.8	K
9.5		34.8	14.0	
9.4		41.6	46.3	
9.2		42.1	29.2	
9.5	47	40.2	50.6	
9.3	48	19.1	41.3	
9.5		42.5	31.2	
9.2	49	8.9	10.2	*b*
9.5		16.0	27.8	
8.9	50	3.9	33.9	L
9.1		11.4	20.1	*a*
9.5		28.6	22.8	
9.5		57.1	6.0	
8.0	51	7.7	48.4	K
9.4		18.6	29.5	
8.3	52	14.1	18.4	K
8.0		37.2	56.1	K
9.5	53	2.6	3.9	
9.0		42.3	32.0	K
9.0		42.9	35.1	K
9.5	54	26.3	55.0	
9.5	55	6.0	30.0	
8.8		27.5	23.0	
8.6		41.7	45.6	L
9.5		51.5	3.9	
9.5	56	4.6	41.3	
9.0		45.8	6.6	
8.9		47.1	43.3	
9.0		48.6	18.1	
9.4	57	6.0	13.0	
9.5	58	27.5	45.0	
9.4		41.5	2.5	
9.3		48.3	12.2	
9.4		55.9	9.2	
9.2		59.7	13.9	
6.9	59	13.5	19.6	K
9.0		52.7	46.5	K

10pr.	+ 31.54	— 2.81

2261 — 2320 9ᵐ—10ᵐ +6°

m	′	″	′	
9.0	59	53.8	13.7	
8.5	0	5.5	59.9	K
9.3		53.5	19.5	
9.5	1	29.8	24.6	
7.1		39.3	53.0	K*b*
9.5	2	2.9	26.1	*B*
9.5	3	25.7	19.3	
8.0		36.1	53.2	K
9.1	4	10.0	55.0	K
8.5		11.4	1.6	K
9.5	5	27.0	43.9	
8.8		34.5	12.4	K
9.5		59.3	17.9	
9.5	6	15.4	48.2	
9.5		30.0	47.0	
8.2	7	8.9	28.7	K
9.3		51.8	15.2	
9.4	8	12.2	31.1	
9.0		27.2	39.4	K
9.4		30.8	42.8	
9.0	9	52.1	7.0	K
9.5		56.0	41.3	
8.7	10	15.4	6.2	K
9.2		22.0	18.3	*b*
8.9		24.8	8.0	K
9.2		25.3	35.7	
9.5		57.4	24.9	
9.5	11	10.2	5.2	
9.5		19.6	44.5	
9.5		34.9	7.3	
9.4		45.1	7.4	
8.9	12	6.3	55.0	K
9.0		9.9	37.8	R
9.4		36.6	27.6	
9.0		58.9	5.8	
9.3	14	16.0	4.1	
9.5		19.9	56.4	
9.5		30.4	40.0	
9.0		33.8	56.9	L
9.4		53.4	38.5	
6.7	15	43.2	25.8	K
9.5	16	33.1	43.4	*aB*
8.4	17	27.6	18.8	K
9.2		44.2	1.1	*aB*
8.7		50.1	36.5	K
9.5	18	46.7	20.5	
9.5		51.1	1.0	
8.5	19	6.4	47.3	K
9.5		53.8	17.3	
9.5	20	18.8	3.2	
7.9	21	47.3	59.8	K
9.4		52.4	26.7	
9.5	22	25.2	27.5	
9.5		29.1	37.5	
8.5		48.4	28.4	K
8.1	23	28.5	5.6	K*b*
9.5	27	4.7	52.3	
8.9		45.8	33.5	*B*
9.5		49.5	37.6	
9.3	28	0.4	59.6	

10pr.	+ 31.41	— 2.97

2321—2380 10ᵐ +6°

m	′	″	′	
9.5	28	14.3	7.0	
9.2		24.4	25.1	*b*
9.5		28.5	34.8	
9.3	29	34.1	59.9	
9.3	30	21.8	6.8	
7.7		55.1	40.9	K
9.3		57.6	8.2	
7.7	31	10.1	28.8	K
9.0		16.4	43.6	K
9.5		26.1	39.7	
9.5	32	11.3	20.3	
9.5		12.2	9.9	
9.5		37.5	56.5	
9.2	33	2.8	38.3	
8.9		5.2	13.8	
9.5		26.4	52.0	
8.9		28.7	33.8	
9.5	34	44.9	48.9	
9.5	35	38.9	36.9	
9.0	36	9.7	44.2	K
9.0		33.5	44.5	
9.0		44.6	39.3	
8.5	37	6.0	15.3	L
8.8		15.3	47.9	K
9.5		19.5	25.0	
9.4		33.5	37.3	
8.2	38	12.2	8.3	K
9.5	39	37.0	39.8	
9.2	40	15.0	28.6	
9.5		34.0	41.9	
9.3		46.0	32.2	
9.4	41	19.6	27.4	*aB*
9.3		22.1	1.4	
9.5		25.5	32.7	
9.0		47.8	42.0	
9.3		49.1	36.1	
9.3		49.4	27.2	
9.5	42	5.0	45.8	
9.5		9.1	20.2	*aB*
9.5		50.0	17.0	
9.5	43	2.2	8.0	
9.5		22.0	41.2	
8.0		22.8	21.4	K
8.8		38.9	49.3	K
9.5	44	2.5	36.9	
8.8	46	20.9	15.9	K
9.5		21.0	27.3	
8.0	47	14.2	37.2	K
6.5	48	31.4	57.2	K
7.8	49	0.5	2.1	K
9.0		18.5	24.2	K
9.5		45.5	3.0	
*9.5		49.0	48.8	
9.3	50	6.9	58.6	
*9.4		56.2	35.5	
9.5	51	6.0	16.9	
8.8		9.8	8.0	K
9.3		40.9	17.9	*aB*
9.0		43.4	31.8	
9.5	52	30.4	31.3	

10pr.	+ 31.23	— 3.14

2381—2440 10ᵐ—11ᵐ +6°

m	′	″	′	
9.0	52	30.5	55.1	K*b*
8.8	53	5.3	32.4	
8.7		8.2	17.6	L
5.2		14.7	52.1	K
9.0		22.0	45.7	K
9.3		29.1	3.2	
8.5		30.4	6.7	K
8.7		39.3	28.3	L
9.5		49.4	55.7	
9.3		55.7	56.7	
9.5	54	32.3	4.6	
9.5		40.5	13.7	
9.2		42.6	26.9	*b*
9.5	55	12.0	59.3	
9.5	56	28.3	51.7	
8.8		36.7	38.6	K
8.2		49.1	0.4	L
8.5		51.6	34.8	K
9.3	57	34.7	59.7	
9.5		38.5	1.0	
8.0	59	11.2	13.1	K
9.5		14.0	42.0	
9.5		56.0	53.6	
8.7	0	3.0	38.6	K
9.5		9.0	11.3	
9.2		16.6	51.7	
9.4		47.3	53.2	
9.4	1	42.8	59.2	*aB*
8.8	2	23.0	32.4	K
9.3		26.4	57.1	
9.5		31.5	27.2	
9.3	3	1.5	56.4	
*9.0		51.6	45.5	
9.0	4	16.0	36.6	
9.5		27.5	19.1	*aB*
9.5	5	5.3	52.8	
9.3		11.2	12.5	
8.5		31.2	0.7	R
8.5	6	18.4	44.6	K*b*
8.5		48.6	46.1	K
8.3	7	0.3	3.2	K
8.0		3.2	46.9	K
9.3		20.6	24.2	
9.5		34.4	4.1	
8.5		44.0	14.6	K*b*
9.1	8	21.3	25.2	*a*
8.8	10	22.2	25.9	
9.1		35.3	52.0	K
*8.8	11	25.2	4.4	
9.5		43.4	58.2	
9.1		47.1	28.5	*aB*
8.9		59.1	28.7	*R*
8.9	12	13.7	58.6	K*b*
9.0		36.6	26.6	*R*
9.3	13	1.7	35.1	
9.5		2.0	16.9	
4.3		40.1	48.7	K
9.0		48.3	32.2	
9.2		59.8	27.0	
9.5	14	35.9	30.1	

10pr.	+ 31.10	— 3.24

2441—2500 11ᵐ +6°

m	′	″	′	
9.5	15	36.0	2.3	
9.3		48.6	28.2	*aB*
8.7		58.2	54.6	K
9.4	16	16.2	47.7	*aB*
9.5		43.0	16.7	
9.5	17	13.3	51.7	
9.4		24.7	11.4	*aB*
8.1		42.9	31.9	K*b*
9.5		51.7	44.9	
9.2		54.5	54.4	K
8.7	18	13.9	33.0	K
9.5	20	25.0	46.9	
9.5		34.3	28.5	
9.2	21	44.5	54.1	K*b*
9.4	22	3.0	59.5	
9.5		19.7	7.8	
9.4	23	2.5	9.9	*b*
9.5		31.2	11.5	*aB*
9.5	24	48.5	12.5	
9.5	25	19.3	22.5	
9.3		21.2	4.7	
9.5		58.4	14.6	
9.0	26	2.7	39.7	K
9.4		37.0	12.2	
9.0		37.2	44.5	K
9.5	27	8.0	38.9	
9.5		57.0	15.2	*b*
9.4	28	14.9	17.4	*aB*
9.4		35.0	58.3	
7.4	29	7.3	54.4	K
9.3		27.0	42.3	
9.5	30	52.5	31.0	
9.3	31	3.0	55.2	
9.3		8.0	53.5	
8.5		8.5	34.5	B
9.5		17.3	38.2	
8.8		32.0	35.0	L
8.2		36.9	51.3	K
9.1		52.5	57.5	*a*
8.5	32	40.1	39.9	K
9.5		58.2	25.9	
9.5	34	17.3	0.8	
9.4		25.0	14.5	
9.2		27.7	56.0	*b*
8.7		59.5	17.7	
9.5	35	4.6	52.3	
9.5		13.5	27.0	*aB*
9.5		32.9	26.0	*aB*
9.5	36	46.6	50.9	
8.9		51.0	13.8	
9.5		53.3	25.1	
9.4	37	38.5	28.8	
9.5		43.0	14.8	
8.5	38	14.0	17.7	K
8.7		26.3	2.2	K
9.5	39	16.9	59.0	
9.2		19.0	41.0	K
8.5		23.5	20.4	L*b*
9.3		25.0	51.3	
9.5		31.5	43.7	

10pr.	+ 30.92	— 3.31

2372 a
9.7 | 49 48.7 | 13.9 | B
2374 a
9.7 | 50 54.1 | 47.1 | B

2412 a
var | 3 21.0 | 14.9 |
2428 a
9.6 | 10 45.2 | 57.7 | B

2501—2560 (11ᵘ—12ᵘ, +6°)

m	ᵐ	″	′	
9.5	39	40.5	44.1	
8.7		45.3	11.0	L
9.5	40	2.5	30.6	
8.8		11.0	41.3	K
9.5		13.0	12.1	
9.1		21.4	57.7	K
9.5		30.5	26.2	
9.4		34.0	35.0	
9.3	41	5.5	52.6	
9.0		22.5	34.0	B
9.5		54.9	36.8	
9.5	42	10.6	39.2	aB
9.3		53.5	13.5	
9.3		56.3	18.0	
9.3	43	20.0	46.3	
9.5	44	30.8	49.6	
9.5		38.5	45.3	
8.7		42.5	26.1	K
9.5		56.3	40.5	
9.5	46	5.9	49.4	
9.5		32.0	35.8	
9.1		57.7	2.1	ab
9.5	47	23.5	39.9	
8.8		24.0	35.7	L
8.7	48	3.0	38.9	K
9.5		34.1	26.5	
9.5	49	1.7	11.7	
9.5		3.3	39.0	
7.6		21.7	9.2	K
9.5		23.0	21.0	
8.9		43.1	16.0	K
9.3		55.1	10.5	aB
9.5	50	50.2	51.0	
9.1	51	41.5	49.1	K
9.5	52	14.3	23.4	
8.5		51.7	9.4	K
9.5	53	36.5	54.8	
9.5		57.7	8.3	
9.3	54	21.8	54.5	b
9.5		43.0	53.1	
9.5	55	19.0	38.8	
9.0		46.0	11.4	B
7.2	56	21.0	21.9	K
9.5	57	51.0	21.8	
9.5	58	12.0	2.9	
9.5		12.8	10.1	
9.5		19.2	53.4	
8.0		25.3	9.6	K
8.8	59	19.9	6.6	K
9.3		26.6	58.3	
8.8		28.0	36.5	K
9.5		36.5	23.2	
9.2	0	22.5	49.4	
9.5		23.5	9.5	
8.4		38.8	50.6	K
9.5	1	14.8	5.2	
9.5		51.3	16.8	
9.2	2	39.3	31.5	K
6.5		41.5	36.2	K
9.0	3	7.0	28.8	
10pr.		+ *30.79*	− *3.33*	

2561—2620 (12ᵘ, +6°)

m	ᵐ	″	′	
9.5	3	50.0	43.7	
9.5	4	21.5	44.8	
8.8		33.2	9.4	K
8.0		54.0	40.4	Kb
9.5		57.0	27.0	
8.3		58.5	53.2	K
9.5	5	18.0	55.9	
9.5		40.5	43.8	
9.5		41.0	29.1	
9.5		41.5	18.4	
9.5		59.3	18.9	
9.5	6	46.6	48.6	
9.3	8	36.7	27.6	S
9.3		37.8	7.2	
9.3		45.0	21.2	
9.2		58.6	0.5	
9.0	9	0.0	10.8	
9.4		15.6	24.4	aB
9.5		20.0	49.7	
9.5		28.7	30.4	aB
9.5		39.7	6.1	
9.5	10	11.7	31.1	
9.5		15.5	44.1	
9.0		45.2	53.2	
9.5	11	14.3	9.9	aB
9.5	12	9.0	29.8	
8.5		17.0	22.5	K
7.8		23.1	50.4	K
7.8		32.5	28.1	K
9.5		32.6	20.3	aB
9.3		40.0	42.5	B
9.0		44.3	33.3	K
9.0		49.4	59.9	K
8.5	13	48.5	16.7	K
9.3	14	7.0	54.5	
9.2		28.0	18.4	K
9.3		32.5	50.9	
9.2		53.7	27.4	
7.1	15	10.7	6.3	Kb
8.6		16.3	43.7	L
9.5		29.2	16.2	
8.7		29.8	43.4	L
9.5		45.7	56.3	
9.3		51.7	42.0	
9.3		52.8	11.2	
8.1	16	47.8	46.8	Kb
9.1	17	5.7	14.9	a
9.5		15.9	16.2	
9.5		47.6	41.0	
9.2		59.2	42.7	K
9.5	18	19.3	27.2	
9.5		25.1	30.5	b
8.3	19	15.8	6.5	K
9.5	20	5.0	6.7	
8.3		16.8	57.3	K
9.5	21	1.6	0.2	
9.0		36.8	27.3	K
7.8		39.3	46.1	K
*9.2	22	41.3	6.9	
8.0		48.7	41.5	L
10pr.		+ *30.64*	− *3.33*	

2618 a

9.3	*22*	*27.8*	*48.7*	*B*

2621—2680 (12ᵘ, +6°)

m	ᵐ	″	′	
8.8	23	1.0	15.4	
9.5		10.0	51.5	
9.0		18.3	20.6	
8.0	24	28.0	31.1	K
9.5		47.5	11.3	
9.1		59.3	30.3	K
9.5	25	52.5	24.1	
9.1		53.7	34.9	K
9.5	26	26.0	50.8	
8.5	27	10.0	47.3	K
9.5		23.3	30.3	
9.5		46.3	32.8	
9.5	28	35.5	21.3	
9.5	29	3.8	20.5	
9.5		46.0	36.2	
9.5	30	43.7	26.9	
9.4	32	22.3	54.5	K
9.4		29.0	39.2	
9.0		30.0	15.8	K
9.3		47.5	57.8	K
9.5	33	21.0	22.4	
9.4		22.7	59.5	
9.5	34	19.0	23.4	
8.7		27.3	39.1	K
9.1		36.2	12.5	K
9.2	35	25.2	27.1	
8.5		33.8	4.6	K
9.5		50.9	31.2	
9.5	36	12.6	39.6	
9.5		40.6	1.4	
9.5	37	40.3	9.0	
9.2		59.6	55.0	K
9.5	38	33.6	49.0	
9.9		54.9	20.5	
9.4	39	5.9	57.0	
9.5		17.0	1.1	
9.5		17.2	25.0	
9.5		23.4	8.3	
9.2		30.6	34.7	
6.7		41.6	45.8	K
9.4	41	46.5	52.0	
9.5	42	52.3	38.6	
9.0		59.2	43.7	
var	43	44.5	20.5	B
9.5		53.2	14.2	
9.0	44	27.2	8.7	
9.5		43.9	44.5	
9.3	45	39.2	38.8	
9.5		43.2	49.9	
9.3	46	42.7	12.8	b
8.7		57.8	58.5	K
8.8	47	5.2	19.4	K
8.0		55.2	5.6	K
9.3	48	1.0	4.0	K
9.4		1.9	39.3	
9.0		13.6	19.4	
9.5		56.9	50.6	
9.4	49	24.7	51.3	
9.2		51.2	34.4	b
9.5	50	26.9	26.0	
10pr.		+ *30.47*	− *3.30*	

2681—2740 (12ᵘ—13ᵘ, +6°)

m	ᵐ	″	′	
9.5	51	2.6	52.6	
9.5		52.6	42.7	
9.5	52	2.3	36.8	
9.5		7.2	9.6	
9.3		15.4	48.8	K
9.5		30.9	43.7	
8.8		50.0	47.4	K
8.9		55.0	28.1	K
9.3	53	12.0	9.7	
9.0	55	31.4	44.1	K
9.5	56	0.8	16.8	aB
9.5		6.6	50.0	
9.5		18.3	1.2	
9.5		49.3	31.2	
9.5	58	21.2	37.5	
8.7	59	39.0	43.8	K
6.8	1	29.9	0.6	B
9.4		38.9	50.6	
9.5	2	14.8	26.0	
8.2		18.4	45.5	Kb
9.5	3	0.5	45.9	
9.5		27.1	19.7	
9.5		53.8	50.7	
9.5	4	23.4	24.8	
9.5		29.0	59.6	
9.5		33.3	4.0	
9.5		56.4	54.2	
9.5	5	24.2	8.5	
9.5		29.6	49.2	
9.2		39.8	12.8	b
9.5	6	7.8	58.0	
9.5		56.9	5.4	
9.5	7	21.1	32.6	
9.3		27.4	10.4	
9.4		41.5	16.0	
9.4		54.4	19.2	
9.5	8	2.0	54.8	
9.5		3.1	36.8	
9.4		18.1	26.0	b
9.0	9	30.8	41.8	B
9.0		35.4	56.3	K
5.2	10	17.1	14.1	K
9.5		18.3	29.1	
9.0		29.8	21.5	K
8.7		56.4	14.9	K
9.5	11	19.2	5.8	
8.2	12	17.1	13.8	K
9.4		33.4	56.9	
9.5	13	5.4	20.1	
9.2		8.2	7.6	
9.0		23.4	33.7	
9.5	14	7.4	58.0	
9.0		29.3	35.9	
9.5		30.1	12.2	
9.1		48.1	55.9	K
9.4	16	28.2	52.5	K
9.0	17	20.2	24.8	K
9.5		21.7	43.5	aB
9.5		33.5	53.2	
8.0	19	8.2	28.9	K
10pr.		+ *30.29*	− *3.20*	

2741—2800 (13ᵘ, +6°)

m	ᵐ	″	′	
9.5	19	17.7	42.8	
9.3		29.9	35.8	aB
9.5		31.8	47.0	K
9.5		41.2	5.3	
9.5		52.5	1.4	
9.5	20	40.3	57.8	
9.5	21	6.3	58.3	
9.5		6.7	49.2	
9.4		44.7	43.8	B
7.0	22	40.7	45.6	Kb
9.0		43.8	5.1	
9.5		52.8	52.4	
9.0	24	20.0	18.5	
9.5		21.1	55.0	
9.3	25	39.6	11.7	
7.0		51.7	35.6	K
9.5		59.7	42.8	
9.5	26	3.7	13.0	
8.7		42.9	3.3	K
9.5	27	1.0	0.5	
8.5		5.2	19.6	
9.5		48.5	22.4	
9.0		49.2	18.6	
9.5	28	17.2	47.1	
9.2	29	30.3	49.8	b
9.5	30	4.2	40.5	
9.2		8.6	10.4	
9.5		30.1	31.8	
9.4		47.1	39.2	
9.4	31	25.1	26.3	
9.3		25.4	2.8	
8.0		41.4	18.5	K
9.5		54.6	5.3	
9.5	32	31.4	43.5	
9.5		37.8	9.5	
9.5		40.1	15.4	
9.5		41.4	37.6	b
9.5	33	41.9	8.1	
9.5	35	49.3	41.2	
9.5	36	11.8	42.5	
9.4		21.7	21.0	
9.5		25.6	10.4	b
9.0		29.4	55.4	K
9.5		36.5	12.0	
9.3		47.7	37.7	
9.2	37	1.4	48.4	Kb
9.5	38	3.9	2.8	
9.5		7.0	58.6	
9.5	39	0.4	29.6	
9.5		25.1	31.8	
9.5		26.7	22.7	
8.8		42.4	44.6	Kb
9.5	40	8.3	1.2	
9.0		38.1	1.2	K
9.5	42	0.0	8.6	
9.4		8.3	1.7	
9.5		47.7	57.8	
9.5	43	2.7	4.0	
9.5		8.1	36.9	
6.4		8.4	12.7	K
10pr.		+ *30.13*	− *3.08*	

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	13ᵐ—14ᵐ		+6°			14ᵐ		+6°			14ᵐ		+6°			14ᵐ—15ᵐ		+6°			15ᵐ		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	43	58.1	37.0	K	9.4	8	51.3	55.6		9.5	30	12.3	21.6		9.5	56	33.3	48.4		8.7	18	44.6	27.9	K
8.4	44	53.4	43.5	K	9.0		53.4	33.8	K	9.5		28.7	15.6		9.5		46.5	53.5		9.4		53.4	22.7	
9.2	45	1.1	8.8	b	7.3	9	6.8	44.2	K	9.5		54.0	32.0		6.3		56.5	4.1	K	9.5	19	46.7	57.2	
9.0	46	28.6	50.5	K	8.3		19.5	11.6	K	8.7	33	6.3	5.3	K	9.5		59.0	55.3		9.5	20	0.2	5.8	
9.5		59.4	35.3	αB	9.5		41.7	11.2	α	9.5		38.0	21.7		9.5	57	9.4	52.2		9.4		6.0	58.3	
8.5	47	33.1	38.4	K	9.3		43.4	44.2		9.5	34	19.7	20.9		9.5		48.3	13.2		9.4		7.2	49.8	B
9.3		54.5	58.3		8.9	11	26.3	54.8	Kb	9.5		27.7	4.5		8.7	58	5.2	51.4	K	9.0		19.8	35.8	K
9.5	48	47.1	25.2		9.0	12	14.7	31.0	K	9.4		34.2	23.9		9.5		9.3	26.5		8.0		32.8	36.6	K
9.6		52.5	6.1		8.2		25.4	32.8	K	8.9		52.0	50.7	K	9.3		24.3	33.7		9.5		39.9	58.6	
9.5	49	5.7	36.6	α	9.5	13	40.6	3.0		9.5	35	1.6	43.8		9.5		25.4	57.2		9.3	21	6.2	16.2	B
9.2		51.1	47.0		9.5		54.7	20.6		9.5		37.7	30.6		9.0		42.0	40.7		8.7		12.5	3.4	K
9.4		59.0	58.1		9.5	14	2.7	15.8		9.5	36	14.0	26.4		9.5		54.6	20.2	αB	9.5		45.8	53.2	
9.0	50	0.1	43.2		9.5		55.4	10.1		9.5		37.0	31.3		9.5	59	0.1	26.6	αB	8.7		57.0	31.1	K
9.1		30.5	52.3	αb	7.9	16	47.7	28.3	K	9.4		58.5	25.5	b	9.5		3.6	54.6		9.2	22	41.8	50.9	b
8.8	51	8.1	18.9	K	5.5		59.1	28.6	K	8.9	37	21.0	59.1	K	7.2		7.5	6.2	K	9.5		55.6	2.3	
9.5		27.5	11.1		9.5	17	3.4	57.5		9.5		36.3	48.4		8.5		28.0	20.8	K	9.5		57.3	58.7	
8.5	52	11.1	23.0	K	9.5		47.1	24.1		9.5		38.3	19.1		9.2		50.2	55.8	K	9.5	23	11.5	28.6	
9.3		11.7	35.5		7.7		48.1	16.1	K	9.2	38	14.3	47.3		9.5		55.2	10.9		8.7	24	59.0	19.9	K
8.6	53	59.7	40.8	K	9.5		50.7	51.7		8.8		34.0	40.4		9.3	0	23.4	9.6		9.5	25	38.6	32.2	
9.0	54	12.4	37.0		9.3		55.4	47.0		9.5		39.7	47.7		8.2		26.0	50.1	K	9.5		49.7	15.7	
9.2		17.4	13.6	b	8.7	18	41.2	9.0	K	9.5	39	36.3	52.3		6.3		29.6	3.4	K	9.3	26	4.0	0.9	
8.9		41.1	42.2		9.5		46.4	29.7		9.2	40	9.1	0.8		9.4		31.9	26.7		9.5		20.9	26.6	
9.5	55	3.1	23.3		7.5	19	29.4	36.2	K	9.5		39.7	20.8		9.5		49.4	31.8		9.5	27	7.4	55.7	
9.0	56	6.1	39.4	K	7.8		49.4	37.0	K	9.5		52.0	17.7		9.5	1	10.1	29.2		9.3		13.4	22.1	
9.5		56.3	10.0		9.6		55.4	14.0		9.5	41	18.5	5.2		9.5		15.5	2.2		9.4	28	10.3	14.4	
9.5	57	5.7	31.5		9.1	20	2.1	59.0	K	7.5		42.5	33.4	K	9.5		21.7	29.5		8.5		24.9	33.1	K
8.5		33.0	7.0	K	8.6		32.4	29.4	K	9.1	42	14.1	8.5	αb	9.5		35.8	34.1	B	9.5		26.6	51.2	
9.1		37.3	58.8	α	9.5		32.4	39.7		9.5	43	18.0	3.2		9.4		40.2	56.3	B	9.5		34.0	20.6	
9.5		43.3	5.4		9.5	21	1.4	56.5		9.5		56.7	21.6		9.3		57.0	56.8	Bb	7.5		56.4	38.7	Kb
8.7		46.5	2.6	K	9.0		3.4	47.9		9.5		56.9	58.8		9.5	4	0.9	34.0		9.4	29	0.0	44.8	
9.5		47.7	36.5		7.6		15.4	20.3	P	9.5	44	5.3	51.9		9.3	5	35.8	50.4		9.4		4.0	36.2	
9.5		55.4	48.9	K	8.3		25.7	39.7	L	9.5		8.3	16.7		9.1	6	55.3	53.9	b	9.1		23.1	54.2	K
9.1	58	11.7	38.3	αb	9.5		30.2	24.1		9.5		21.7	13.9		9.5		59.8	2.4		9.4		24.7	5.0	
9.3		19.0	52.5		9.5		34.8	38.0		9.5		59.0	24.7		9.5	8	36.0	41.9		9.5		58.1	2.1	
9.5		36.4	13.0		8.7	22	54.1	55.8	Kb	9.4	45	3.3	20.8		9.5	9	45.2	54.2		9.5	30	37.5	5.8	
9.5	59	40.1	51.5		9.5		57.7	22.2		9.5	46	6.7	42.8		9.5		47.7	53.0		8.0	31	31.9	44.2	K
9.5	0	10.4	58.7		9.0	23	16.1	22.7		6.7		30.4	50.7	Kb	9.5		52.5	2.1		9.5		34.7	51.6	
9.2		25.5	57.1	Kb	9.5		25.5	9.2		9.5		51.0	5.4		9.0	10	8.8	13.6	K	9.3		44.4	59.6	
8.8		26.1	15.4	K	9.5		46.5	43.2		9.5		53.0	37.9		9.5		31.4	59.8		8.7		47.2	36.7	K
8.8	1	23.7	43.6	K	9.5		55.3	47.8		9.5	48	1.7	36.5		9.2	11	22.0	32.5	Rb	* 9.5	32	33.7	47.7	
9.2		25.6	31.7	K	9.5	24	11.1	23.4		8.7	49	6.3	44.9	L	9.3	12	16.7	38.7		9.5		54.6	16.1	
9.5	2	10.7	56.2	αb	9.5	25	6.2	6.3		9.5		26.0	25.7		9.5		33.8	59.2		9.5		58.1	6.0	
9.5		39.1	23.7		9.5		10.1	39.9		8.0		53.4	0.6	K	9.2		57.0	29.6	K	9.0	33	19.3	50.6	Kb
9.1	3	19.1	8.1	αb	9.5		27.7	47.4		9.0	50	16.0	30.6		9.3	14	8.3	47.6	b	8.9		26.2	27.6	K
9.0		23.4	22.4		8.2	26	14.5	56.0	K	9.5		58.7	29.4		9.5		41.6	29.5		8.8		37.3	1.3	K
8.0		30.4	29.3	L	9.5		21.9	13.7		9.5	51	22.2	36.7		7.8		50.8	7.4	L	9.5		39.0	22.0	
9.3		46.7	5.1		8.8		22.9	27.7		9.3		31.1	55.1	b	9.5		51.0	26.2		9.3	35	12.8	36.7	b
9.5		55.7	44.3		9.4	27	7.7	30.6		9.0		53.3	13.5		9.5		58.2	16.2		2.2	37	9.6	53.1	K
9.5		55.9	5.7		9.4		17.6	18.8	αB	9.4	52	30.4	40.4		9.5	15	11.2	57.9		9.2		13.7	37.5	
9.5	4	6.9	36.8		9.5		32.5	8.5		9.0	53	4.0	33.4	Lb	8.2	16	0.6	34.3	K	9.3		52.2	8.3	
9.3		25.1	3.9		9.3		34.7	36.5		8.7		31.3	37.9	L	9.5		15.3	47.7		9.5	38	14.7	2.3	
9.3		26.9	6.7		8.5		38.0	46.3	K	9.5	54	5.7	53.0		9.5		37.3	47.4		9.4		22.0	47.3	
9.5		31.0	36.6		9.5	28	54.0	59.1		9.3		20.7	19.7		9.4		38.5	34.5		9.5		37.9	2.9	
9.2	5	32.8	15.1	K	9.5	29	22.7	38.3		9.1		34.3	11.7	αb	9.2		58.0	42.5		9.5		47.5	3.2	
9.3		54.7	23.0		9.5		23.7	30.7		9.2		43.7	41.4	K	9.5	17	1.4	54.7		9.5		58.4	43.0	
7.8	6	9.7	4.4	K	9.2		38.0	18.7	K	9.3		55.7	50.2		9.2		52.7	27.3	K	8.2	39	5.9	33.5	K
9.5		19.1	30.0		9.5		40.0	35.2		9.5		56.5	1.7		9.5	18	6.6	1.6		9.2		18.7	59.6	
9.5		34.9	1.7		9.5		48.7	22.7		9.5	55	8.3	31.0		9.5		16.3	54.7		9.1	41	2.3	51.9	αB
9.5	7	20.9	1.9		9.0		52.0	5.3		9.4	56	17.2	55.8		9.0		27.1	29.3	K	9.5		59.8	52.8	
9.5	8	42.4	46.0		9.3	30	1.9	3.4		9.1		27.3	3.1	K	9.5		42.5	5.7		9.5	42	26.0	44.7	
		+	−				+	−				+	−				+	−				+	−	
10pr.		29.97	2.91		10pr.		29.84	2.73		10pr.		29.72	2.62		10pr.		29.62	2.31		10pr.		29.51	2.04	

3079ᵐ				
9.7	32	5.7	35.7	B

3101—3160

m	15ʰ—16ʰ	+6°	
9.5	42 35.8	43.6	
9.5	59.1	50.7	
8.0	43 4.3	24.0	K
9.5	11.2	31.0	
9.5	14.4	22.2	
9.5	25.4	20.2	
9.5	44.9	43.9	
9.4	45.4	58.7	
9.4	44 17.3	53.2	
9.0	27.0	20.3	
9.2	54.7	10.4	
9.5	45 38.8	14.0	
9.4	46 1.0	0.4	
9.0	21.3	3.0	K
9.5	54.6	49.4	
9.3	47 12.3	36.0	
9.2	13.3	30.0	
8.8	35.8	1.6	
9.3	49.5	20.7	
9.5	48 5.7	7.3	
9.5	10.2	26.9	
9.4	21.2	18.6	aB
9.4	26.0	20.7	
8.9	33.5	8.4	K
9.5	36.0	51.9	
9.5	49 34.2	37.3	
8.0	34.9	20.3	K
9.0	50 15.6	40.0	
9.5	45.6	29.7	
9.5	57.8	4.1	
9.0	51 7.0	30.7	Kb
9.0	48.3	4.4	K
9.5	54.9	4.6	
9.5	56.7	59.9	
9.4	52 19.6	3.9	
9.5	53 36.5	57.0	
9.5	51.0	3.7	
9.5	51.5	2.5	
9.4	54 21.4	45.7	b
9.5	51.4	40.4	
9.5	55 34.8	13.6	
9.5	38.0	41.5	
9.5	56 22.6	57.4	
9.5	37.0	7.8	
9.5	37.9	54.7	
9.2	41.2	44.3	
8.1	57 4.3	27.4	K
9.3	9.6	39.7	
7.9	12.8	23.4	K
8.7	22.8	35.6	K
9.5	29.6	29.0	
9.5	31.5	6.0	
9.0	33.2	53.1	
9.5	58 1.5	55.3	
9.0	59 17.3	35.6	
9.5	48.0	42.8	
9.3	56.7	14.0	
9.5	0 11.0	31.0	
9.0	26.6	29.7	K
9.5	31.9	54.4	
10pr.	+ 29.43	— 1.78	

3161—3220

m	16ʰ	+6°	
9.5	0 36.5	43.6	
9.0	40.0	30.8	K
9.2	41.4	52.2	
8.8	45.4	16.5	K
9.4	51.4	23.5	
9.5	56.0	30.0	
9.5	1 39.7	30.0	
9.5	57.7	56.7	
6.5	2 3.4	48.0	K
8.8	31.0	15.3	
9.5	35.1	23.8	
9.5	40.3	52.5	aB
8.5	56.5	54.7	K
9.5	3 14.6	59.4	
9.5	39.3	38.3	aB
8.7	46.9	45.1	Kb
9.4	55.5	34.3	aB
9.5	4 21.8	45.2	
9.5	5 47.5	6.4	
9.5	52.9	10.4	aB
9.4	58.9	2.3	
9.2	6 0.2	23.3	
8.0	11.6	25.3	K
7.0	7 6.1	16.1	K
9.5	13.5	55.3	
8.9	16.8	39.3	K
9.2	41.9	25.2	
9.5	44 4	31.7	aB
9.5	59.2	39.3	
9.4	8 27.8	18.0	B
9.3	28.7	38.6	
8.5	46.5	24.2	K
8.3	52.8	24.2	K
9.3	9 25.7	6.4	
9.2	41.1	36.8	
9.0	58.0	35.5	Kb
9.4	10 6.3	9.4	
7.7	54.5	26.4	K
8.2	11 6.2	28.8	K
8.7	36.3	38.9	L
9.5	12 4.7	28 8	
9.5	14.4	35.5	
9.0	15.8	5.7	K
9.5	13 0.1	18.1	
8.8	4.2	4.1	K
9 5	6.9	12.2	
9.5	25.7	53.3	
9.5	14 20.3	35.1	
9.0	25.5	11.6	
8.1	35.7	8.8	L
9.5	46.3	2.5	
9.3	49.8	52.9	K
9.5	15 12.7	55.3	
9.5	19.0	53.4	
9.3	48.8	27.8	b
9.3	16 14.6	8.7	
9.1	29.6	56.4	a
9.3	32.2	38.6	
9.5	36.4	5.6	
9.5	18 14.5	20.9	
10pr.	+ 29.38	— 1.56	

3221—3280

m	16ʰ	+6°	
9.5	18 28.9	56.0	
9.4	30.1	39.1	aB
9.5	34.3	43.4	
9.4	35.4	35.4	
8.5	42.9	2.7	K
9.0	56.3	13.3	K
9.2	19 24.1	56.8	
9.3	24.7	27.1	K
9.4	42.7	35.0	aB
9.3	20 10.2	33.8	
9.1	15.7	36.1	Kb
9.4	28.1	5.0	
9.5	21 32.0	57.3	
9.5	42.0	57.3	
9.1	22 19.1	32.3	ab
7.0	44.4	17.7	Kb
9.5	23 37.8	47.5	
9.6	50.6	42.3	
9.5	57.1	10.2	
9.5	24 8 2	1.0	
9.5	20.1	2.0	
9.5	42.5	16.0	
9.5	55.9	27.8	
8.0	25 56.9	55.8	K
8.7	58.8	51.4	K
9.5	26 2.6	51.8	
9.4	13.2	41.6	aB
9.5	30.2	44.6	aB
9.3	27 12.8	25.4	
9.2	32.6	25.4	K
9.5	58.7	38.9	
9.5	28 26.3	24.6	
8.6	28.1	18.0	K
9.5	54.9	44.0	
9.5	29 5.4	35.7	
8.7	18.5	57.0	
9.5	26.0	44.3	
9.5	30 9.8	15.3	
9.5	21.8	36.9	
9.5	35.7	37.6	
9.1	38.4	53.4	K
9.1	51.0	0.0	Kb
9.0	31 2.0	1.6	K
9.5	3.3	15.0	
9.5	27.3	2.0	
9.5	44.9	53.2	
8.8	32 6.1	57.4	K
9.5	53.9	8.5	
9.5	54.1	14.6	
9.5	33 18.3	26.1	
9.4	29.8	20.0	aB
9.4	33.2	20.7	K
9.1	34.2	16.3	K
9.1	37.1	4.3	a
9.3	34 23.7	33.6	aB
9.4	35 18.8	48.7	aB
9.0	26.8	25.7	K
9.0	36 15.0	15.7	
9.4	15.0	43.6	aB
9.3	26.8	24.7	K
10pr.	+ 29.32	— 1.30	

3281—3340

m	16ʰ	+6°	
9.0	36 31.4	54.1	B
7.8	35.3	53.5	K
9.5	37.2	8.1	
9.5	56.2	50.0	
9.1	58.1	57.2	K
9.5	37 23.4	32.6	
9.3	56.2	50.3	
6.5	56.7	22.6	Kb
8.8	38 26.5	57.5	
9.5	58.1	19.8	
9.5	39 7.0	33.0	
9.5	25.7	9.0	
9.5	26.9	46.5	
9.0	40 46.6	52.0	K
9.5	41 22.1	13.3	aB
9.0	42.0	58.1	K
9.0	42 27.8	26.0	K
9.3	35.5	43.4	K
9.2	43 16.7	39.6	
9.3	25.8	32.7	
9.2	27.7	49.2	aBb
9.3	40.7	52.0	aB
9.5	43.3	19.3	aB
9.5	44 13 3	7.1	
9.5	18.4	22.6	
9.5	21.3	47.5	
9.5	49.1	11.1	
9.5	50.3	47.5	
9.3	45 45.6	57.4	
9.3	46 12.6	5.1	Kb
9.4	16.8	15.0	
9.5	47 10.8	55.2	aB
9.3	41.3	26.1	K
9.2	48 44.2	39.6	K
8.7	54.2	6.0	
9.5	49 15.3	47.5	R
8.5	22.7	30.9	K
7.5	46.5	44 0	Kb
9.5	49.3	5.4	
9.2	50 9.1	49.3	R
9.2	14.8	15.0	
7.0	15.5	26.7	K
9.5	49.7	59.3	
9.2	57.7	1.4	
9.2	51 17.9	45.1	K
9.5	50.8	8.5	
9.2	52 8.1	50.0	K
9.4	16.0	4.6	
8.2	27.7	1.4	K
9.4	53 6.1	10.2	
9.5	12.0	58.4	
7.0	25.1	48.5	K
8.7	54 6.9	39.6	K
9.5	26.2	55.1	
9.2	29.3	26.4	
9.0	42.5	50.0	
9.3	55 13.6	18.4	
9.5	16.2	5.0	
8.5	39.0	39.5	K
9.4	46.2	21.1	
10pr.	+ 29.28	— 1.06	

3341—3400

m	16ʰ—17ʰ	+6°	
8.9	56 15.7	17.7	B
9.5	28.1	9.0	
9.5	57 15.8	20.5	
9.0	29.1	54.8	K
9.3	35.4	58.9	
9.4	38.8	5.3	
9.3	58 18.6	35.6	
9.3	39.7	32.6	
9.5	47.5	59.0	
9.5	59 36.9	0.7	aB
9.5	49.8	3.7	B
9.5	0 7.2	2.0	
9.5	30.8	58.6	
9.2	34.0	32.5	
9.2	1 6.4	39.2	ab
9.5	2 13.5	18.4	
9.5	17.8	32.6	
9.5	3 8.6	13.9	
9.5	36.5	6.1	
9.3	59.1	5.1	a
9.5	4 28.8	18.4	
9.5	28.9	52.0	
9.2	34.8	47.2	
8.7	35.6	35.7	
8.7	44.7	8.1	K
9.1	5 13.3	47.2	a
8.6	19.2	55.7	K
9.1	40.6	56.9	K
8.4	45.3	13 6	Kb
9.5	6 4.2	56.5	
9.5	41.6	1.6	
9.2	7 1.4	56.9	
9.0	9.7	32.3	
9.5	30.2	1.4	
9.5	55.2	21.5	
9.3	8 6.0	6.0	
9.3	30.1	59.8	
8.0	39.2	34.0	Lb
9.5	50.4	18.1	aB
9.5	9 48.3	0.8	
8.0	10 30.7	54.8	K
9.5	11 31.5	23.9	
9.5	34.5	43.8	aB
9.2	37.8	15.0	aB
9.5	41.5	39.7	
7.0	47.6	14.9	K
9.3	12 28.1	7.2	
9.0	30.8	56.4	K
9.0	43.1	15.6	K
8.4	45.6	42.2	K
9.5	58.7	43.6	a
9.5	13 16.6	14.5	aB
8.2	45.2	34.3	K
9.0	48.3	51.3	K
9.5	14 7.6	55.2	
9.3	10.0	6.7	
9.0	20.9	34.3	K
9.5	50.0	25.7	
8.9	54.1	42.1	K
8.2	59.8	40.9	K
10pr.	+ 29.24	— 0.78	

3372ᵉ				
9.2	7	7.5	38.9	B

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	17ʰ		+6°			17ʰ		+6°			17ʰ		+6°			17ʰ—18ʰ		+6°			18ʰ		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.2	15	10.7	40.5	K	9.5	29	2.3	12.8		9.4	38	20.1	40.9	αB	9.2	50	49.6	37.5	b	9.5	2	50.5	54.0	
9.3		11.5	52.1		9.2		7.5	53.2		8.7		22.4	47.4	K	9.3	51	1.2	51.8	K	9.4	3	12.6	13.0	
9.2		15.2	48.3	αB	8.7		10.6	43.8	K	9.5	39	6.9	9.3		9.3		9.1	27.4		9.5		13.2	1.2	
9.5	16	19.1	44.5		9.0		14.7	15.6		7.9		24.2	17.8	B	9.2		12.3	53.2	K	9.5		17.5	29.5	
9.0		44.3	12.9	K	9.5		15.2	8.6		7.9		31.6	10.8	B	9.5		26.5	4.9		9.4		30.3	9.2	
9.2		44.4	49.3		9.0		17.3	24.7		9.1		41.4	39.2	a	9.5		34.7	49.4		9.5	4	19.0	43.7	
9.5	17	5.2	6.7		9.3		36.0	7.9		8.6		49.5	33.9		9.5		55.1	37.5		9.4		21.1	1.9	
7.5		23.0	39.6	Lb	8.9		44.2	58.3	K	9.5		53.3	54.2		9.5	52	4.3	5.8		9.5		21.2	2.7	
9.5		28.8	53.6		9.5	30	6.6	55.1		9.5	40	9.2	13.5		7.2		24.2	26.0	K	neb	5	3.3	49.5	K
9.5	18	0.7	8.3		8.2		11.3	32.3	K	9.5		23.0	4.9		8.5		29.4	29.3	K	8.5		14.4	19.4	K
8.2		11.9	33.6	L	9.0		16.2	24.0		9.5		36.9	18.7		9.4	53	3.2	44.0		9.2		17.8	50.0	K
9.0		12.7	13.4		9.5		31.7	47.8	αB	8.0		49.4	27.6	R	9.5		3.3	7.3		9.5		27.9	1.6	
9.3		28.9	47.7	αB	9.5		33.5	52.5		9.0	41	5.7	19.5		7.5		6.2	34.0	K	9.5		40.9	49.4	
9.5		53.1	15.0		9.3		37.8	58.3		9.5		6.4	5.1		9.2		6.4	58.1	K	9.5		56.2	36.8	
9.3	19	12.3	40.7	αB	8.9		39.3	33.8	K	9.0		18.4	56.1		9.5		21.0	39.6		9.5	6	7.5	48.6	
9.5		16.4	24.7		8.2		58.2	34.0	K	9.5		23.0	2.3		9.5		45.0	51.5		9.5		14.7	12.0	
9.4		19.3	53.7		9.5	31	1.6	37.2		9.5		33.8	54.9		7.0		48.4	16.5	K	9.5		17.9	14.7	
9.5		21.7	6.8		8.3		5.0	17.7	L	9.5		38.0	3.0		9.5	54	16.5	6.5		9.5		20.1	5.2	
9.5		26.9	43.9		9.5		19.3	45.9		9.5		48.2	15.8		8.9		23.2	54.5	L	9.5		35.2	49.4	
9.3		43.5	54.3		8.5		36.6	17.7	Kb	9.1		56.3	2.5	K	9.5		44.7	23.6		9.4		48.3	12.5	
9.3	20	3.2	55.9		9.5		48.0	36.5	αB	9.4		57.4	3.2		9.4	55	21.6	17.6		9.5	7	5.1	17.6	
8.8		21.6	37.9	K	9.5		49.1	56.7		9.5	42	2.1	43.3		9.4		38.5	13.9	αB	8.8		7.9	42.6	K
9.4		37.6	8.9		9.1		51.6	7.5	a	9.3		10.4	2.7		9.5		47.2	5.1		9.2		16.4	29.8	b
8.8		49.8	1.3	K	9.5		54.0	16.9		9.1		14.0	12.1	K	9.5		57.4	30.6		9.5		40.0	27.9	
9.5		53.3	3.4		9.5		54.2	37.9		9.5		22.5	40.3		9.2	56	2.5	18.1	αBb	9.5		56.2	19.7	
9.3		59.3	23.9		9.4		57.6	39.6		9.3		38.3	21.8		9.4		26.2	32.9		9.5	8	5.7	35.9	
9.5	21	8.3	5.8		9.4	32	2.6	41.0	B	9.1		48.6	15.5	K	9.1	57	2.3	26.4	S	9.1		17.8	57.7	a
9.0		12.4	8.0	K	9.5		21.9	6.8		9.5		56.9	40.6		9.1		8.7	16.6	K	8.4		18.6	49.8	K
9.5		41.2	46.9		9.2		24.0	18.4	K	9.3	43	3.5	52.3		9.0		10.2	32.4		9.1		24.1	26.8	a
8.0	22	5.2	16.5	K	7.0	33	17.0	38.9	K	9.5		42.5	58.4		8.2		22.8	25.3	K	8.8		26.4	39.7	
9.5		7.7	41.7		9.5		27.4	7.5		9.5		43.4	29.8		9.2		31.7	14.4	K	9.5		30.8	46.0	
9.1		28.0	18.6		9.3		44.3	22.9		9.0		49.0	9.9		8.8		40.0	21.1	K	9.1		32.9	9.0	a
9.3	23	1.1	6.9		9.3		53.0	19.0		8.6		51.2	49.3		9.5		41.8	52.4	αB	9.5	9	2.2	35.4	
9.3		34.8	52.7	αB	7.9	34	11.0	0.8	K	9.4	44	17.7	23.8	αB	9.0		45.5	52.5	B	9.4		10.2	30.1	
9.5		37.9	40.2	αB	8.7		15.5	51.8	K	9.5		25.7	5.0		9.1		50.2	34.3	a	9.5		11.4	46.2	
9.4		47.8	52.9	αB	9.3		23.2	2.3		9.5		28.4	30.9		9.5		50.8	51.3	αB	8.7		16.7	17.9	Kb
9.0		49.0	19.5	B	9.3		24.0	7.3		9.5		36.8	5.3		9.5		58.2	16.6		9.4		26.4	51.7	
9.4		51.0	55.5	a	6.5		27.7	23.5	K	9.5		42.5	0.6		9.0		59.9	7.4		9.2		27.3	34.0	
9.0		54.4	19.4	B	9.5		51.6	49.7		9.5		48.8	6.5		8.7	58	11.4	43.7	K	9.5		43.1	51.6	
9.3	24	3.3	9.4		9.5	35	6.4	41.2		8.0		58.2	45.0	K	9.0		35.7	40.5	K	9.0		59.3	45.0	
8.9		9.0	28.1	K	9.0		12.8	49.1		8.3	45	8.2	25.1	K	9.5		45.1	5.7		9.5	10	16.5	11.0	
9.5		17.8	19.5	αB	8.9		13.4	27.1	K	8.5		19.6	49.0	B	9.5	59	10.0	59.5		9.3		28.2	35.1	
9.5	25	4.8	20.8		9.0		17.1	1.7	K	8.7		59.0	51.3	B	8.9		17.2	5.1		9.5		36.0	45.0	
9.2		5.7	9.1	K	9.4		21.2	8.3		9.4		59.2	25.6	B	9.0		44.2	58.7	K	9.3		37.2	20.7	
9.5		12.4	45.6		9.5		23.7	28.3		8.7	46	5.6	39.2	K	8.0		45.2	23.9	L	9.5	11	6.6	55.7	
9.5		58.7	13.8		9.5		47.8	27.3		5.9		11.1	7.8	L	7.5	0	14.2	41.3	K	9.5		7.0	26.6	
8.7	26	0.4	40.0		9.5		53.0	20.1		8.9		36.2	57.4	K	7.5		18.8	31.7	K	9.2		9.8	53.2	
9.5		40.1	39.6		9.3	36	3.8	17.0		9.0		38.0	17.9		9.4		20.6	56.1		9.5		19.7	7.7	
9.5		57.3	22.9		9.5		8.5	15.0		8.9	47	8.8	2.2	K	9.3		44.7	29.3		9.3		21.1	4.3	
9.5	27	5.7	12.8		9.2		14.9	17.9		9.5		20.3	23.5		9.5		49.1	55.1		9.4		50.4	51.5	
9.5		13.2	2.6		9.5		17.4	33.4		9.5		35.7	37.1		8.2		50.4	47.6	K	9.0		50.8	11.9	
9.5		14.8	13.4	a	9.5		43.0	2.6		9.5		45.0	5.2		9.5	1	8.6	0.6		9.5		56.0	4.2	
8.0		20.6	37.8	L	9.5		44.0	56.9		9.5		58.8	33.3		9.5		27.1	0.0		9.4	12	1.3	1.2	
8.8		27.4	30.9		8.0		58.7	7.8	B	9.0	48	6.7	55.4	K	9.3		35.7	15.1		9.5		6.6	59.2	
8.5		42.8	5.7	K	9.3	37	31.0	43.6		8.8	49	9.1	48.3		9.4		50.9	36.7		9.5		12.6	49.4	
8.0		44.5	7.8	K	9.5		38.5	17.7		7.8		39.3	52.1	K	9.5		57.6	2.9		9.5		23.5	24.9	
9.5		52.6	15.6	B	9.2		41.7	40.9		8.8		52.1	11.5		9.3	2	4.7	5.7		9.1		23.9	14.8	a
9.5	28	10.0	27.0		9.4	38	2.0	25.5		6.8		54.9	30.5	B	7.7		30.4	7.5	K	9.5		47.2	40.1	
9.3		17.8	10.3		8.7		13.4	57.8	K	9.1		59.0	4.8	a	7.0		39.1	11.4	K	9.4		57.7	2.3	
9.3		43.2	14.5		9.2		19.0	3.2		9.5	50	35.3	12.8	αB	9.4		48.8	16.6		9.3	13	10.8	31.0	
10pr.		+ 29.22	— 0.55		10pr.		+ 29.21	— 0.39		10pr.		+ 29.20	— 0.24		10pr.		+ 29.20	— 0.04		10pr.		+ 29.20	+ 0.12	

3701—3760				3761—3820				3821—3880				3881—3940				3941—4000			
	18ᵃ	+6°			18ᵃ	+6°			18ᵃ	+6°			18ᵃ	+6°			18ᵃ	+6°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.1	13 19.5	29.2	K	9.0	19 48.2	18.1		9.5	24 5.9	32.0		9.2	32 44.9	41.6		9.5	40 44.7	52 9	
9.0	23.8	14.1	K	8.4	49.2	20.7	K	9.5	16.2	19.6		9.5	54.6	32.3		9.5	52.1	4.3	
9.2	14 12.5	5.1		8.6	51.0	24.3	K	9.5	17.4	43.5		8.6	56.3	1.0	Kb	8.2	59.3	29.9	K
8.2	14.4	45.1	K	9.5	51.0	15.8		8.0	22.5	21.7	K	9.5	33 6.7	19.2		9.5	41 24.8	8.6	aB
9.1	15.2	27.0	a	9.2	56.9	20.3		9.2	35 8	6.9		8.7	7.0	28.9		9.3	25.9	52.3	
9.5	23.5	7.1		9.2	57.8	19.8		9.5	37.7	40.0		8.8	37.6	9.6	K	9.5	39.6	11.0	
9.5	30.5	48.9		9.5	59.9	11.6		8.9	37.9	20.4	K	9.2	39.5	22.6		9.5	43.3	15.2	
9.5	31.0	8.5		9.4	20 0.2	7.0		9.5	41.3	35.5		9.5	40.9	23.1		9.3	42 17.0	0.9	aB
9.4	46.3	6.2		8.6	1.3	26.7	K	7.2	59.3	41.1	Lb	9.5	43.7	58.6		9.5	18.6	57.3	
9.5	48.7	18.2		9.2	6.9	56.8		9.5	25 1.0	7.3		9.5	47.4	32.0		9.5	33.5	9.3	
9.5	50.1	48.0		9.2	9.8	23.5		9.5	2.0	8.0		9.2	52.0	14.5	K	7.8	47.3	42.0	K
9.5	15 2.5	14.4		8.5	10.4	26.1	K	9.4	2.3	43.8		9.4	56.4	40.1		9.2	55.4	3.2	a
9.5	11.9	33.7		7.7	12.5	55.4	K	8.3	13.2	50.7		9.4	57.3	34.1		8.2	43 25.3	3.8	K
9.3	14.7	6.1		9.3	16.1	24.4		9.5	36.7	51.4		9.5	34 15.0	24 6		9.5	56.1	31.6	
8.5	18.7	27.3		9.1	19.3	3.0	a	9.1	42.8	50.3	a	9.5	24.3	49.9		9.5	44 16.7	10.2	
9.5	19.9	21.9		9.2	22.0	9.5		9.4	56.4	30.7		9.4	29.5	35.8		8.3	37.8	59.4	K
9.5	28.2	51.4		9.5	22.7	19.4		9.5	59.6	53.7		9.5	31.9	24.5		8.7	55.3	25.4	
9.5	32.4	56.4		9.0	26.0	30.5		8.5	26 3.5	14.4	K	9.0	54.3	40.8	Kb	9.4	45 7.4	51.5	
9.5	36.5	56.6		9.3	28.1	27.7		9.0	6.7	29.9		9.4	35 0.1	26.7		9.5	36.0	56.8	
9.4	37.8	9.2		8.6	32.0	27.9	K	8.8	8.0	38.3		9.3	4.4	35.0		8.5	37.6	44.5	K
9.5	40.6	49.2		9.2	34.5	34.1		8.7	11.6	22.9	K	9.5	29.7	31.8		9.5	44.2	35.0	
8.8	53.2	41.2		8.7	35.3	26.5		9.5	45.0	32.4		9.3	40.6	29.1		9.5	44.7	47.3	
9.5	16 4.8	37.6		9.0	36.0	2.1		9.5	48.1	20.5		9.2	50.4	47.8		9.0	53.7	28.5	L
9.5	5.5	10.1		9.5	42.1	38.4		9.5	27 14.3	37.0		8.6	36 0.2	4.9		9.2	53.8	17.0	
9.5	6.6	47.3		9.5	42.9	43.7		9.5	19.0	52.1		8.8	2.3	37.7		9.4	46 3.9	30.1	
9.5	7.3	14.5		9.2	44.0	22.0		7.2	27.1	21.7	K	9.5	2.6	59.5		9.5	6.7	44.9	
9.5	25.8	5.1		9.5	48.4	52.8		9.4	42.2	42.4		9.5	13.0	57.9		9.1	32.5	2.2	a
9.4	33.4	44.6		8.7	51.0	30.6	K	9.5	47.8	22.7		9.1	27.3	50.3	a	9.5	44.6	5.9	
9.2	43.4	45.5	aB	9.5	51.8	10.4		9.5	50.3	57.0		9.5	32.7	10.3		8.9	51.3	39.8	K
9.5	47.7	32.1		6.5	55.2	6.8	L	9.5	28 3.7	9.9		8.7	45.0	23.0		9.5	53.4	58.5	
9.5	52.1	9.0		9.2	57.5	49.9	K	9.1	7.0	27.1	a	9.5	46.7	1.8		9.5	54.8	7.1	
8.6	57.4	45.5	B	9.5	21 0.8	52.3		8.9	7.7	3.6		9.2	50.2	54.6	Kb	9.5	47 0.5	17.7	
9.4	58.7	57.1		9.5	8.0	37.3		9.5	29 7.5	53.5		9.1	53.8	30.0	a	9.4	4.3	5.2	
9.0	17 21.7	29.7		9.4	9.6	24.6		9.2	23.3	13.2		9.3	56.3	46.2		8.7	30.2	20.2	B
9.5	25.0	50.1		9.4	10.9	28.5		5.8	36.8	33.4	L	9.4	37 9.2	32.5	aB	9.4	36.8	10.7	
9.5	27.2	12.4		9.0	13.5	40.9		8.8	37.2	40.8		9.5	17.9	31.7	B	9.5	37.2	18.3	
9.0	39.1	59.5		8.5	18.4	44.8	K	9.4	41.9	43.7		9.1	51.0	52.6	a	9.0	48 5.3	55.0	
8.9	39.6	57.1		9.0	19.4	37.6		9.3	48.8	45.2		9.0	52.8	59.3	K	5.8	22.8	26.6	K
8.6	52.3	57.2	L	9.0	19.4	19.5		7.5	55.0	18.1	B	9.3	53.9	39.4		7.0	42.9	59.7	K
9.3	59.7	51.6		9.4	22.9	51.8		9.5	56.8	30.8		9.3	38 0.3	38.5		9.5	43.1	53.5	
8.9	18 3.3	42.5		9.5	28.0	58.7		9.5	30 20.1	42.6		8.2	4.2	31.0	K	9.1	55.9	9.5	a
9.5	27.4	8.4		9.5	30.0	29.8		8.9	33.2	57.3		9.5	6.8	9.0		9.5	57.7	30.1	
9.4	29.7	2.5		9.5	30.9	48.2		9.5	33.6	7.7		9.5	20.1	48.4		7.6	58.3	56.7	K
9.2	32.0	34.6		8.7	36.1	42.4	K	9.2	40.9	11.2		9.5	40.5	12.9		9.4	50 15.2	30.4	K
9.5	33.8	12.8		9.5	40.4	4.3		9.5	49.5	40.2		9.2	46.6	21.8		8.8	21.9	47.8	
9.5	41.8	11.5		*9.5	22 2.0	54.1		9.5	53.2	42.6		9.1	49.9	5.5	ab	9.5	28.5	25.1	
9.4	52.0	30.6		9.3	2.6	13.2	B	9.4	31 3.4	21.7		9.3	39 3.3	22.6		8.8	51 3.6	39.0	
9.4	19 6.9	37.2		9.5	3.0	12.1		9.4	6.0	25.8		9.4	11.8	57.4		8.9	16.5	19.8	
9.4	8.1	31.7		9.3	10.6	41.9		9.5	13.5	48.3		9.3	15.6	40.1		6.8	18.1	3.1	K
9.3	18.4	20.3		9.5	17.0	2.7		9.5	17.6	44.6		9.1	27.0	24.2	a	9.3	31.5	5.1	
9.1	19.6	52.6	a	8.9	17.3	46.0		9.5	19.0	59.9		9.5	33.4	9.5		9.5	53 43.8	23.3	
9.2	20.0	46.5		9.4	18.2	33.0		9.4	20.0	56.8		9.5	52.4	43.4		9.3	54 2.4	4.9	
9.2	20.5	50.9		9.5	18.6	31.0		9.0	40.4	57.5		9.4	55.2	58.7		9.5	36.0	20.8	
9.2	22.4	57.1		9.5	28.2	52.4		7.3	50.5	8.9	K	9.3	56.5	29.0		9.4	36.0	9.3	
9.4	29.9	26.8		9.5	35.7	48.9		8.8	58.6	8.8		8.1	40 12.9	39.7	K	9.5	41.2	55.0	
8.7	30.1	26.7	K	8.0	46.1	40.5	K	9.3	32 6.4	24.7		9.3	15.8	45.0		9.5	43.8	10.9	
9.2	34.3	27.3		9.1	48.0	8.3	ab	9.4	11.9	22.7		9.5	16.0	38.4	aB	9.5	47.5	32.8	aB
9.5	41.5	19.4		9.1	54.0	39.2	K	9.1	13.8	15.6	a	9.5	21.5	21.3		9.2	55 13.4	40.0	
9.5	42.0	15.8		9.5	55.5	40.5		9.5	30.2	23.4		9.5	23.0	31.4		8.9	13.6	44.3	
9.5	43.3	54.4		9.2	24 5.2	19.9	K	9.5	34.0	57.2		9.4	28.5	38.4	aB	9.4	20.9	38.6	
	+	+			+	+			+	+			+	+			+	+	
10pr.	29.20	0.24		10pr.	29.20	0.30		10pr.	29.21	0.41		10pr.	29.22	0.53		10pr.	29.23	0.69	

3805ᵃ			
var	21	44	12.5

4001 — 4060				4061 — 4120				4121 — 4180				4181 — 4240				4241 — 4300			
	18ʰ—19ʰ	+6°			19ʰ	+6°			19ʰ	+6°			19ʰ	+6°			19ʰ	+6°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	55 50.8	6.6		9.5	6 43.5	16.7	α	9.5	17 1.9	19.9		9.1	25 28.4	35.5	α	9.5	32 19.3	15.6	αB
9.5	55.2	1.5		9.5	7 3.9	18.1		8.9	24.3	48.0		9.5	38.5	32.8		9.4	40.8	29.6	
9.5	59.7	23.4		9.5	7.0	57.4		9.1	26.2	39.6	αB	9.5	45.0	38.7		9.3	44.1	7.1	
9.2	56 3.5	45.7		9.5	13.5	6.9		9.4	29.4	11.9		9.5	50.9	2.0		9.3	33 1.7	52.6	
9.4	3.7	34.3		9.1	15.6	2.9	α	9.5	41.6	25.2	αB	9.5	59.8	52.2	αB	9.4	9.3	31.7	αB
9.4	21.4	7.6		9.5	20.8	29.0		*9.5	51.0	25.8		9.5	26 0.0	29.4	αB	9.3	12.3	53.4	
9.5	32.0	26.0		9.5	8 5.9	51.1		9.5	18 22.5	48.0		9.5	16.1	23.2		9.3	18.3	32.0	
9.3	50.4	11.0		9.5	12.4	8.6		9.4	24.4	41.7		9.5	26.4	38.3		9.2	19.6	50.3	
9.5	57 11.4	15.9		9.2	24.8	58.9	αB	9.4	39.1	5.4		8.5	43.5	17.0		9.5	22.0	15.8	
9.3	33.3	11.9		9.4	26.9	57.9	α	9.5	48.8	0.7		9.5	49.6	45.7		9.5	43.8	51.2	
9.5	55.3	2.8	αB	9.4	43.5	12.3	αB	8.1	19 1.6	54.6	L	9.0	59.7	10.4		9.5	52.5	24.8	
9.4	58 2.7	43.1	B	9.0	9 16.6	21.4	K	9.5	16.5	27.6		9.4	27 6.0	46.5		8.8	34 15.0	11.7	
9.1	24.7	58.0	α	9.5	18.8	22.0		8.8	33.9	1.9	K	9.5	16.2	36.0		8.8	18.4	50.9	K
7.0	43.1	20.0	K	9.5	26.5	56.7		9.5	34.1	8.0		9.5	19.6	30.5		8.8	21.7	41.2	
9.5	44.1	1.5		7.2	29.4	20.5	K	9.4	59.4	30.5		8.8	26.1	8.3		9.2	34.3	53.7	
9.5	52.9	0.8		8.7	35.0	40.4		9.2	20 9.6	40.5	b	9.5	29.5	10.6		8.3	36.3	51.4	K
9.4	55.2	55.4		9.5	10 2.5	59.6		9.3	17.1	55.4	B	9.5	36.2	2.4		9.5	45.4	19.8	
9.5	59 5.2	14.9		9.5	8.7	48.0		9.5	21.3	13.8		8.8	39.1	31.9		9.4	46.5	1.5	
9.5	12.9	37.3		9.5	9.3	40.6		9.3	22.7	51.0		8.9	39.9	50.1	B	9.5	48.4	33.8	
8.8	14.0	25.1	K	9.0	17.2	33.2		9.3	28.0	54.5	α	9.1	42.9	47.6	α	8.9	51.1	36.7	
7.2	20.6	56.3	K	9.5	17.2	7.9		9.5	37.6	47.0		9.2	45.6	1.5		9.2	58.3	4.0	
9.0	28.1	3.5		*9.5	11 11.9	8.7		9.4	55.8	15.7		8.7	45.8	52.1	K	9.5	35 18.7	24.8	
7.3	30.3	40.0	L	9.3	19.4	38.4		9.5	56.1	10.2	αB	9.5	56.1	33.3		9.5	25.1	33.8	
9.1	44.2	23.7	K	8.7	23.1	4.5	K	9.1	58.2	19.5	α	9.3	28 1.0	22.5		9.4	32.5	0.6	
9.3	54.6	55.5		9.5	40.0	47.7		9.2	21 3.2	51.7		9.1	4.8	3.1	α	9.2	37.0	0.4	αB
7.0	0 35.5	45.8	L	9.5	12 6.7	56.5		9.5	14.0	42.1		9.2	11.5	49.3		9.5	40.6	36.7	
9.4	1 7.9	50.9		9.5	7.8	53.5		9.5	14.5	45.3		9.5	13.6	59.8		9.4	58.9	58.1	
9.3	26.1	16.3	α	9.5	11.1	16.6		9.4	18.6	34.5		9.4	29.8	55.7		9.4	36 4.6	3.7	
9.3	27.8	28.1		9.5	11.9	49.5		9.5	23.7	22.4		9.5	43.4	40.6		9.0	14.0	9.1	
9.5	39.5	6.8		7.8	17.0	52.6	K	8.2	25.9	0.6	L	9.1	52.4	27.8	K	9.1	16.0	10.2	α
9.4	47.7	12.7		9.1	19.8	12.6	αB	9.5	41.1	30.3		9.3	54.8	11.9		9.5	16.5	7.2	
9.5	2 5.3	1.0		9.5	35.0	28.8		9.5	42.0	47.5		9.5	59.1	58.7		9.5	16.5	9.0	
8.8	8.0	3.6	K	9.2	36.8	26.2		9.5	43.0	51.8	αB	9.4	29 14.8	3.3	αB	9.3	18.2	55.2	
9.3	29.7	3.6		9.5	48.5	3.3		9.0	52.1	12.1		9.3	37.5	11.4		9.5	21.3	39.4	
9.4	3 2.7	53.4		9.5	13 13.1	32.4		9.0	56.8	56.0		8.2	40.7	6.8	K	9.5	21.4	1.7	
9.3	15.1	3.1	α	9.5	18.2	0.1		9.5	59.0	51.6		9.5	40.7	57.1		8.1	23.8	8.3	K
9.5	17.2	44.3		9.5	25.6	5.4		9.5	22 18.3	3.9		8.9	45 8	44.1		9.5	46.7	31.8	
9.5	36.8	7.5		9.5	25.9	27.7		9.2	29.9	57.0		8.7	56.2	53.9		9.5	50.9	56.3	
9.5	44.2	59.4		7.3	31.7	22.9	P	9.5	42.2	33.9		9.5	59.1	17.6		9.5	52.0	58.5	
9.0	46.6	37.7	K	9.5	48.9	6.1		9.0	42.5	9.2		9.5	30 4.8	57.3		9.3	37 1.9	55.8	
9.5	48.0	10.2		9.5	55.5	19.6		8.6	50.0	22.9	Kb	9.4	9.7	41.6		9.0	16.5	8.5	
8.9	53.4	37.6	K	9.0	14 20.4	34.1		9.5	50.0	26.8	α	9.5	11.0	25.2		8.9	18.6	15.7	Kb
9.3	4 28.1	36.4	αB	9.0	27.1	28.2		9.4	23 7.3	53.0		8.8	23.5	19.6		9.5	27.6	41.5	
8.5	31.2	15.1	K	9.5	48.7	46.2		9.5	15.9	6.6		9.5	37.2	9.1	αB	9.5	41.1	43.9	
9.5	37.6	18.6	α	8.1	49.1	50.0	B	8.7	17.6	6.1	K	9.5	37.5	24.6		8.0	43.7	53.4	K
9.5	48.1	40.2		9.5	55.6	30.3		9.5	27.6	56.0		8.8	43.4	0.8	K	9.4	47.2	37.3	αB
9.5	56.0	44.8		8.9	56.4	6.4	Kb	9.3	34.0	56.9	αB	9.5	47.2	8.3	α	9.5	56.1	10.2	
9.5	5 3.0	31.4		9.4	15 6.0	52.9		9.5	39.8	37.0		9.2	58.3	23.5		9.2	38 17.5	55.5	
9.5	22.9	37.2		9.4	17.1	7.1		9.5	42.7	18.6		9.1	31 3.5	16.6	α	9.5	26.0	44.2	
9.0	29.5	42.3		9.5	23.0	50.0		9.3	43.0	53.6		9.5	12.8	12.8		9.4	26.8	59.0	
9.2	34.7	38.7	α	9.4	25.8	48.6		9.4	52.0	50.6		9.1	13.3	51.0	α	9.5	30.5	7.5	
8.8	48.9	2.9		9.5	28.2	29.5		7.9	52.1	5.0	K	9.5	23.4	12.0		9.5	35.3	3.1	
9.0	6 2.8	16.3	B	9.5	31.3	12.2		8.9	24 35.7	54.9		9.5	24.1	17.5		9.5	37.9	4.9	
9.5	4.9	23.4		9.5	45.2	45.1		8.2	39.0	37.0	B	9.3	31.7	25.9		9.5	54.3	30.8	
9.5	11.2	22.0		9.5	16 13.3	14.1		7.8	40.2	33.4	B	8.4	35.1	6.3	K	9.5	54.8	45.6	
9.5	25.0	33.2		9.5	26.0	34.0		8.9	42.7	42.5		9.4	37.5	11.2		9.5	57.1	3.0	
9.5	25.6	14.5		9.4	33.5	14.3		9.3	25 1.4	12.1	αB	9.4	39.8	29.4		9.5	39 18.8	20.0	
7.8	26.1	24.6	B	9.5	33.7	21.0		7.7	7.3	12.1	Lb	9.5	58.3	15.7	αB	9.2	25.1	4.8	
9.4	26.6	18.8	αB	9.5	34.6	24.3		8.2	8.0	21.8	B	9.5	32 14.4	19.5		8.6	27.0	3.2	
9.4	34.0	13.5		9.5	59.8	32.3		9.5	10.0	29.1		9.5	15.9	33.6		8.2	30.4	42.0	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	29.25	0.89		10pr.	29.27	1.04		10pr.	29.30	1.16		10pr.	29.31	1.26		10pr.	29.33	1.36	

4081ᵐ			
9.5	10	54.0	27.9

4125ᵐ			
9.5	17	43.0	11.8

4301—4360					4361—4420					4421—4480					4481—4540					4541—4600				
	19ʰ		+6°			19ʰ		+6°			19ʰ—20ʰ		+6°			20ʰ		+6°			20ʰ		+6°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
8.8	39	42.0	45 7		9.5	48	39.8	57.7		9.3	57	25.3	30.7		9.5	7	54.0	23.6		9.5	21	3.0	3.3	
9.5		53.1	22.0		8.8		46.3	13.8	K	9.2		52.5	53.9	Kb	9.5		54.5	58.6		9.5		33.4	3.9	
9.5	40	0.9	21.1		9.5	49	4.0	16.8		9.3		57.0	52.8		9.4	8	3.8	59.5	aB	8.5		56.2	40.9	K
9.5		10.4	7.0		9.4		5.2	24.8		9.0		59.4	0.2		9.5		33.0	15.1		9.5	22	13.3	27.4	
9.1		15.2	0.7		9.4		9.4	27.5		9.5	58	3.7	16.7		9.5		41.3	19.8		9.2		26.5	54.5	b
8.5		45.5	22.0		9.5		22.6	32.9		8.5		29.1	58.4	K	8.0	9	12.4	37.9	B	9.1		36.0	24.0	a
8.7		46.1	35.3	K	9.1		22.9	52.9	a	9.2		29.3	20.3		9.5		15.3	56.7		9.3		52.6	32.0	
9.3		50.7	3.2		9.2		39.4	45.1		9.2		30.0	19.5		9.4		44.2	10.2	a	9.5	23	7.7	46.2	
9.0	41	3.1	33.6	K	9.5		41.7	5.8		9.3		49.5	21.0		9.2		47.2	29.0		9.4		13.0	54.4	
8.8		7.6	35.6		9.5		48.7	20.6		9.5		54.4	51.3		7.6		54.5	37.9	K	9.0		30.3	38.2	
9.1		15.0	27.6	a	9.5		48.9	16.0		9.3	59	3.7	45.6	aB	9.5	10	30.0	3.6		9.3	24	1.8	42.9	aB
9.5		20.0	13.6		9.5		54.5	24.7		9.5		18.2	1.1		9.1		35.7	44.6	a	9.5		26.0	29 9	
9.5		22.8	8.2		9.4	50	7.2	4.8		9.5		19.8	5.7		9.5		44.7	6.6	aB	9.5		30.4	21.3	
9.5		25.1	5.0		8.6		15.6	24.2	K	9.5		30.5	46.2		9.5	11	3.0	39.4		8.8		35.9	8.5	K
9.5		53.2	58.3	aB	9.5		21.7	40.5		9.1		33.0	34.4	a	9.5		30.0	5.0		9.5		41.8	43.2	
9.4		56.9	30.4		9.4		26.1	48.2		9.3		39.3	45.3	B	8.8		35.7	26.9		9.5		58.8	6.5	
9.3		57.4	26.3	aB	9.5		54.0	56.3		9.5		53.0	57.2		9.5		48.0	59.0		8.5	25	13.5	1.5	K
9.5	42	2.3	58.7	B	9.5		54.1	5.9		9.3	0	5.0	32.8		9.4	12	6.6	31.8		9.4		15.5	23.8	aB
9.3		17.2	10.7		9.2	51	3.6	2.3		8.5		12.4	23.3	Lb	9.5		9.2	1.3		9.2		32.2	25.9	aB
9.2		19.8	14.2	b	9.2		5.8	46.3	b	9.3		15.4	4.6		8.6		13.8	57.0		9.5		35.4	26.3	
9.5		23.2	25.7		9.2		19.0	22.9		9.2		16.7	56.4		9.5		57.7	40.7		9.2		38.2	29.7	B
9.3		31.7	20.9		9.4		24.3	38.3		9.5		26.9	58.8		9.5	13	11.6	22.6		9.5		39.3	53.3	
8.5		34.9	56.5	K	9.5		35.8	39.0		9.4		31.0	46.0		9.3	14	5.5	42.0	aB	9.4		43.0	45.8	
9.5		40.2	30.6		8.0		47.4	12.2	K	9.5		31.0	51.8		9.5		25.7	46.1		9.2		47.4	8.4	
9.5		52.6	28.6		9.1	52	5.0	40.4	a	9.4		43.6	52.1		9.5		37.0	7.7		9.0		53.5	5.9	K
9.1	43	6.2	58.6	a	9.5		29.1	47.7		9.5		52.2	41.9		9.5		38.2	21.0		8.2		59.5	20.6	L
9.0		11.3	51.8		9.4		35.1	9.5		9.5		53.5	47.4		9.2		53.5	35.8	aB	9.0	26	2.7	0.0	K
9.5		20.9	0.9		9.5		44.7	4.8		9.5		58.1	28.8		7.1		52.4	43.4	Kb	9.5		19.0	56.4	
9.3		32.5	39.0		9.2		45.5	11.8		9.5	1	9.8	25.3	aB	9.3	15	36.6	46.3		9.0		24.6	14.7	
9.4		42.8	34.1		9.5		48.0	25.1		9.5		15.0	15.6		9.5		46.2	39.7		9.1		26.3	54.5	a
9.2		46.9	53.6		8.3		49.5	49.4	K	9.5		16.7	59.7		9.5	16	8.7	38.9		9.0		51.8	17.2	
9.5		48.6	36.6		8.1		51.9	19.0	K	9.2		30.3	23.0		9.4		10.5	13.5		9.1		59.2	54.5	B
9.0		49.5	26.9		8.1		53.7	33.3	L	9.1		31.0	18.0	a	9.4		20.5	17.5	B	9.3	27	3.7	24.0	
9.5		53.0	10.1		8.6		59.6	58.9	K	8.7		38.2	38.0	L	7.6		41.1	10.0	K	9.3		5.8	28.2	
9.3	44	24.5	53.0		7.8	53	8.8	53.7	B	8.7		48.6	16.2	L	9.2		51.3	11.1	K	9.3		6.0	55.2	
8.9	45	3.1	15.2	B	8.3		10.0	58.0	B	8.7	2	9.1	50.6	L	9.4	17	8.7	7.9		6.8		24.0	23.5	L
9.5		35.7	2.0		9.3		15.7	51.4	aB	9.4		18.0	4.0		9.5		16.1	42.3		9.3		24.8	29.5	
9.5		35.9	18.7		9.3		28.3	39.1	aB	9.3		18.5	18.9	aB	9.2		38.6	56.6		8.0		51.1	2.5	B
9.5		56.5	27.2	a	9.4		41.8	35.6		9.4		57.0	26.5		9.5		39.7	51.7		9.4		56.7	1.8	
8.3	46	18.9	8.9	K	9.3	54	16.0	14.6		9.5	3	43.9	22.2		9.0		50.5	35.5		8.7		59.1	46.2	
9.5		30.0	16.3		8.3		17.7	33.1	B	9.4		59.0	6.8		9.5		56.0	54.0		8.7	28	7.0	8.4	
9.3		33.3	12.6	aB	9.3		19.7	33.4	B	9.5	4	4.6	30.0		7.0	18	18.0	10.9	K	9.2		13.8	23.8	a
9.1		52.0	27.9	aBb	9.3		31.5	45.4		9.1		15.6	12.2	ab	9.0		29.3	57.2		9.0		20.0	53.8	
9.4	47	2.4	11.4		9.5		42.3	55.0		9.5		19.7	43.3		9.5		41.0	59.6		7.2		22.3	27.0	L
9.4		2.9	54.6		9.4		55.0	8.2		9.2		23.0	6.1		9.5		41.3	18.4		9.4		31.7	8.9	
9.1		3.8	51.5	a	9.1		58.3	55.1	B	8.8		38.7	57.9		9.5		53.0	17.5		9.5		37.3	56.0	
9.5		7.9	2.5		8.9	55	4.7	53.7	B	9.4		43.4	7.6	aB	9.5	19	4.7	41.2		8.2		50.4	34.7	B
9.4		12.2	8.7		9.5		45.2	40.2		9.0		44.4	45.2		9.5		16.4	39.8		9.5		57.5	3.7	aB
9.5		27.1	3.5		8.8	56	2.5	51.9	B	9.5	5	11.6	9.4		9.5		25.4	26.7		9.5	29	22.0	21.2	
9.5		34.9	3.6		9.2		4.5	28.7		9.5		20.9	11.5		9.5		32.3	55.4		9.5		47.3	12.9	
7.0		35.1	45.8	B	9.3		8.3	35.5	a	9.1		27.2	56.8	a	8.6		36.2	49.3	Kb	8.9	30	9.9	50.6	
9.3		40.2	25.1	aB	9.5		35.0	2.0		8.5		30.3	54.7	K	9.1		50.2	19.6	a	7.6		25.1	0.1	K
9.5		49.1	32.0		9.5		39.1	30.7		9.0		52.8	29.0		9.0		53.7	50.9	K	9.5		30.3	52.0	
8.9		56.8	14.8		9.2		52.3	7.8		8.8		53.0	54.9	K	9.3	20	13.2	1.5		8.8		43.6	26.2	
9.2		59.0	42.1		9.4	57	1.5	26.4		9.0	6	8.4	6.9		9.1		47.0	55.6	aB	9.0	31	9.0	23.4	
9.5	48	10.6	5.4		6.0		3.9	52.7	L	9.5		30.0	26.4		9.5		47.1	52.8	a	8.3		14.9	32.0	
4.0		11.6	3.0	K	9.0		8.0	17.0		9.5		30.8	1.1	aB	9.5		47.5	54.1	aB	9.5		26.9	30.1	B
9.3		22.3	55.9		9.1		11.4	34.3	a	9.3		32.7	15.5	R	8.0		48.0	24.9	K	9.5		28.8	30.8	
9.2		31.3	52.8		8.9		13.3	20.1		8.1	7	3.9	8.9	K	9.5		51.7	30.9		9.4		38.8	0.1	
9.0		34.4	10.5		9.4		14.7	16.8		7.9		3.9	9.5	K	9.1		52.4	7.2	ab	8.1		47.6	40.6	L
10pr.		29.35	1.46		10pr.		29.38	1.58		10pr.		29.40	1.69		10pr.		29.46	1.87		10pr.		29.50	2.00	

+6° 20°—21°

4601—4660				4661—4720				4721—4780				4781—4840				4841—4900			
	20ʰ	+6°			20ʰ	+6°			20ʰ—21ʰ	+6°			21ʰ	+6°			21ʰ	+6°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	32 4.5	47 0		9.5	43 23.4	28.3		8.7	53 35.0	37.3	K	8.8	7 51.9	59.6	K	9.1	22 47.9	32.0	a
9.3	5.5	49.8		9.1	31.0	11.1	aB	9.5	51.3	31.0		9.5	8 0.0	3.4		8.3	23 26.5	32.0	
9.2	53.2	36.5	b	9.0	40.9	15.7		9.5	55.2	41.2		9.2	29.8	25.8	aB	9.3	33.2	53.7	
8.6	33 18.5	55.7	K	9.3	50.4	18.4	a	9.5	54 0.5	23.0	aB	8.8	44.7	44.4		9.3	42.9	17.5	
9.5	25.6	21.5		9.5	54.8	30.6		9.4	11.3	49.4	aB	9.5	46.0	5.9		9.0	24 18.2	6.8	Kb
9.5	33.4	16.8		9.5	44 8.7	49.3		9.0	20.7	31.8		7.7	9 31.6	54.8	K	8.0	30.3	6.6	K
9.3	42.1	15.1		9.5	18.8	29.0		8.6	21.0	36.3	Kb	9.2	37.1	31.3	R	9.2	25 12.2	9.9	
9.5	43.6	26.5		9.3	24.4	5.6	a	8.0	41.9	58.0	L	9.4	53.8	32.0	R	8.3	18.9	33.7	
9.5	44.8	31.2		9.5	41.6	37.8		9.5	52.1	55.2		9.5	54.8	34.0		9.5	23.9	48.5	
9.5	52.0	16.5		9.3	42.7	32.5		9.5	56.6	19.3		9.5	10 29.1	28.6		8.8	27.6	8.4	
9.5	54.9	54.0		9.2	58.8	15.3	a	6.7	55 4.1	37.0	K	9.3	45.8	14.4		9.3	33.2	30.6	
9.4	34 2.3	14.6		9.3	45 2.3	14.8	aB	9.5	22.2	6.1		9.0	58.8	42.3		9.5	26 45.9	40.2	
9.3	2.9	31.8	aB	9.3	22.4	57.6		9.5	56 2.8	30.6		9.3	11 34.4	19.6		9.5	27 0.0	6.0	
9.4	5.3	31.0		8.5	34.6	46.9	K	9.5	4.0	3.4		9.3	35.4	59.6		9.5	3.9	41.5	
9.5	12.0	55.6		8.7	36.6	46.5	K	9.5	10.2	50.2		9.5	49.0	1.1		9.1	32.5	53.4	ab
9.3	37.8	57.4		8.8	36.9	11.5		8.2	44.9	25.1	K	8.8	12 3.3	57.3		9.5	50.5	37.9	
8.1	35 8.4	40.1	L	8.8	51.6	14.0		9.4	57 6.7	52.4		9.4	7.9	12.6		9.3	28 26.2	20.2	
9.3	22.2	24.8		9.0	52.5	4.0		9.3	8.6	31.9		9.3	40.0	35.1		9.5	35.9	2.0	
8.2	26.1	42.0	L	8.4	57.8	10.4	K	9.5	17.6	49.7	aB	9.3	47.8	50.9		9.4	38.0	49.4	aB
9.4	28.6	22.3		9.1	46 20.9	5.7	K	9.3	58 8.1	48.6		9.1	13 32.8	34.5	aB	9.2	44.0	52.0	
9.5	30.6	43.1		9.4	26.0	32.7		8.8	10.4	30.6	Lb	9.2	51.0	15.4		9.5	56.5	7.8	
8.7	37.5	52.8	K	9.2	27.2	8.1		9.0	21.1	28.9	L	6.0	54.4	45.5	Lb	9.5	29 13.9	46.2	
9.5	58.6	21.2		9.5	44.7	57.1		9.5	28.4	57.2		9.5	59.4	55.4		8.8	26.2	15.1	
9.2	36 1.5	50.6		9.5	48.7	5.6		9.5	34.1	38.9		8.5	14 25.7	20.6	K	9.5	46.5	44.4	
9.5	5.3	28.3		9.3	52.4	41.0		9.5	52.1	29.9		9.5	31.3	6.4		9.5	30 10.5	17.1	
7.4	30.9	3.5	K	9.3	47 1.4	4.2		8.0	59 9.5	55.5	K	9.5	31.8	1.4		9.0	16.2	53.9	
9.3	42.4	43.4		9.3	4.1	46 5	B	9.2	17.8	56.4	a	9.2	56.0	34.9	aB	8.8	23.6	4.0	
9.5	52.9	34.0		9.0	5.2	51.5		9.1	27.0	55.1	a	9.5	15 5.6	33.9		9.0	46.0	1.4	B
9.1	56.8	25.0	ab	9.3	10.8	40.1		9.5	46.1	52.3		9.3	17.4	1.6		8.7	52.9	32.4	
9.5	59.2	16.7	B	9.3	22.4	14.0		9.5	0 1.5	23.7		9.3	36.1	50.9		9.5	31 6.9	11.6	
9.3	37 49.2	29.5		9.4	22.9	46.3	aB	9.5	15.0	22.0		5.1	42.1	12.0	K	9.0	22.2	25.0	
9.0	54.0	2.7		7.0	59.6	58.5	K	8.2	46.6	50.9	K	9.5	47.0	42.0		9.3	42.1	49.3	
9.5	38 7.1	36.8		9.4	48 14.2	20.6		8.8	1 19.7	57.4		9.5	49.8	20.6		9.2	53.8	8.0	
8.3	12.5	31.2	Kb	9.5	23.0	15.9		6.5	19.8	25.1	K	9.5	16 54.0	18.8		9.3	32 16.3	50.2	
8.9	17.8	55.9		9.2	24.4	30.6	b	9.0	24.8	46.5		9.3	55.1	21.9	B	9.3	18.0	5.7	
9.5	18.6	32.8		8.4	45.4	13.9		9.5	26.4	54.8		9.1	59.8	45.8	ab	9.4	20.2	12.3	
9.4	28.2	18.1		9.0	46.5	54.5		8.7	43.0	50.4	L	9.4	17 13.9	23.0		9.3	30.5	42.3	
9.0	33.7	37.8	K	9.3	54.0	14.4		8.7	46.7	3.8	K	9.4	29.2	54.5		8.7	35.2	9.2	L
7.2	50.2	51.7	L	9.5	49 12.0	13.1		8.3	49.5	8.2	K	9.5	18 10.5	14.4		9.5	42.2	12.3	
9.5	39 2.7	16.4		9.5	37.7	55.3		9.5	59.7	27.5		9.2	17.3	29.5		9.0	33 12.3	37.2	Kb
9.0	6.0	16.0		9.5	47.2	48.2	aB	8.8	2 2.2	56.2		9.5	39.6	7.8		9.5	54.2	19.5	
9.2	9.1	29.3	aB	9.5	58.7	17.0		9.2	7.3	55.1	a	9.1	47.6	28.3	B	9.0	34 39.6	28.6	
9.2	21.0	17.1	a	9.5	50 15.6	41.6	aB	9.0	14.8	43.4		9.3	19 8.9	52.3		8.5	42.5	42.3	
8.9	35.2	54.3		9.4	21.9	51.8	aB	9.5	53.1	18.6		9.5	15.9	28.5		8.8	35 2.5	35.8	
9.4	40 17.1	38.3		9.5	23.0	57.5		9.5	56.0	40.2	aB	9.5	18.5	22.2		9.5	28.2	58.5	
8.0	18.8	16.8	K	7.8	53.8	20.6	L	9.5	56.0	47.0		9.5	32.4	3.6		9.5	45.2	28.2	
9.4	22.5	43.9	aB	9.5	51 9.6	50.4		9.5	3 37.7	49.2		9.5	54.2	2.9		9.0	36 22.2	20.2	
7.5	31.1	26.7	K	9.3	25.8	49.8		9.5	4 17.0	11.4		7.8	59.9	17.2	K	9.2	22.8	43.6	
9.5	39.4	23.6		8.9	36.9	31.2		9.5	31.4	8.9		9.3	20 1.5	44.7	aB	6.5	29.0	52.5	L
9.4	41 3.9	33.7	aB	9.5	53.9	3.7	aB	9.5	35.0	34.2		9.5	2.0	45.4		9.5	48.2	46.5	
9.3	19.0	15.8		9.4	52 7.5	0.2	B	9.5	44.1	33.4		9.3	3.2	25.7		9.0	49.8	30.0	K
9.5	42.0	5.9		9.5	18.1	6.2		9.5	44.4	53.0		9.5	22.9	20.2		8.0	55.5	28.8	K
9.5	44.0	26.1		9.5	26.6	23.4		9.5	5 13.2	51.0		9.4	25.0	13.6	aB	8.7	37 36.9	34.0	K
9.4	42 14.2	15.5		9.5	27.5	1.4		9.5	43.2	8.7		9.0	31.2	51.5		8.9	38 51.5	16.4	
9.5	18.2	49.0		9.5	37.6	49.5		9.0	47.1	38.9		9.5	36.9	19.0		9.5	39 5.9	41.6	
9.5	33.5	12.3	a	9.5	43.8	44.2		7.5	6 17.7	37.5	L	9.0	53.5	42.4		9.5	8.9	33.0	
9.5	33.7	3.1		9.1	48 3	15.0	ab	7.6	21.1	33.7	L	8.5	21 40.2	24.8		9.3	13.0	21.8	aB
9.2	38.5	20.6	a	6.5	56.2	57.3	L	9.5	7 6.8	28.2		9.5	22 8.9	25.5		9.5	31.2	8.9	
8.6	43 4.3	29.2	K	9.5	53 0.1	47.0		8.5	9.4	21.6	K	7.9	25.5	16.0	K	9.3	40.5	42.0	aB
9.2	18.8	8.0		8.5	6.3	32.3		9.3	35.2	50.6		8.5	27.9	35.1		8.0	46.6	30.0	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	29.54	2.12		10pr.	29.58	2.23		10pr.	29.64	2.36		10pr.	29.72	2.52		10pr.	29.80	2.66	

21°—23° +6°

4901—4960					4961—5020					5021—5080					5081—5140					5141—5200				
	21h		+6°			21h—22h		+6°			22h		+6°			22h—23h		+6°			23h		+6°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.6	39	51.9	28.2	K		9.5	59	51.3	21.9			9.5	19	51.3	57.2			9.4	47	27.5	13.3	aB		7.7	11	58.8	26.5	K
9.2	40	19.7	53.5	b		9.5		52.8	57.3			8.9		53.4	48.1			9.5		27.5	15.1			9.4	12	45.9	23.5	
8.7		22.2	26.4	L		9.3	0	18.6	12.2			9.5		59.1	49.3			7.8		27.6	30.4	K		7.8		57.2	4.4	Kb
9.3		35.2	59.6			9.5	1	12.3	8.1			9.4	20	10.6	28.8	a		9.4		55.0	20.0	aB		9.5	13	34.2	9.5	R
9.5		51.0	30.6			9.3		16.3	1.7			9.3	21	27.6	4.9	b		8.7		56.2	41.0	K		8.9		53.1	11.8	L
8.3	41	0.9	22.0	K		9.5		17.5	29.5			9.5		45.5	28.9			9.2	48	59.5	53.3			8.5	14	30.0	26.5	L
9.1		7.8	7.8	aR		9.5		27.2	51.4			8.5		59.5	52.0	K		9.5		59.5	59.6			8.3		34.8	49.5	K
9.3		23.1	47.0	aB		8.0		32.4	37.6	K		9.4	22	15.6	4.6			7.6	49	12.6	1.5	K		8.3	15	12.9	43.0	K
8.8	42	15.9	39.6	Kb		9.5		50.5	9.1			9.3	23	27.4	8.4			8.8		57.0	51.7	D		9.3	16	17.4	42.5	
9.2	43	31.5	5.5			8.0		53.8	46.5	K		9.3		28.2	15.0			9.3	50	26.0	6.1			9.5		33.0	37.9	
9.0		55.9	54.4	D		9.5	2	32.9	0.9			9.4		36.0	30.2			8.1	51	6.2	52.3	K		9.5		59.1	58.5	
9.5	44	30.5	40.3			9.3		40.5	16.7			8.9		51.0	40.3			7.3		25.5	34.5	K		9.3	17	4.9	51.0	
9.0		35.4	9.3			8.7	3	4.9	0.2			8.8	24	46.7	39.4	K		9.3		52.4	2.2	b		8.5		37.5	13.7	K
9.5		54.8	57.9	aB		9.5		22.8	44.7			8.2	25	18.4	39.9	K		9.5	52	16.7	43.5			9.2	18	7.4	59.6	K
8.8		58.4	50.4	K		9.5		23.7	40.2			8.6		29.7	53.1			8.5		30.5	35.0	K		9.5		26.9	36.0	
9.5	45	26.5	12.6			9.1		24.9	11.5	aB		9.1		31.0	7.7	a		8.5		48.6	36.6	K		8.6		41.5	59.3	K
9.0		58.6	0.9			9.3		25.5	19.9			9.0		40.5	5.5			9.5		58.8	4.0			9.3	19	49.9	42.7	
8.8	46	7.7	6.1			8.5		59.7	7.4			9.4	26	43.8	24.2			9.3	53	9.0	44.8	aB		9.2	20	47.4	40.7	
6.5		43.2	10.6	K		9.2	4	0.0	31.5	aB		9.3	27	8.1	6.4			9.4		9.0	47.3	aB		9.2	21	14.2	17.8	Rb
9.5		46.7	50.9			9.2		10.6	46.6			9.3		22.2	59.0			9.5		22.0	47.5	aB		8.6		19.9	33.9	R
9.5	47	3.2	6.5			7.9		41.3	11.3	K		9.3	28	30.3	48.2			9.1		22.4	37.5	a		9.5	22	9.8	22.5	
9.5		14.2	28.6			8.3	5	10.6	48.2			9.5	29	34.5	10.9			9.3		53.9	54.5			9.3		13.7	14.8	
9.0		53.6	11.6			9.2		19.9	20.6			8.2	31	7.1	42.1	K		9.4	54	15.8	4.3	B		9.5		25.6	51.6	
9.5	48	12.9	13.0			8.3		25.4	41.8			8.9		12.8	8.4	K		9.4		33.6	10.6			9.3		56.0	56.6	aB
9.5		18.2	20.3			9.0		26.3	24.7			8.6	32	10.3	25.6			9.5		59.0	32.1	Kb		9.0	23	32.2	22.6	K
8.3		27.5	34.8	K		9.3	7	34.3	11.3			9.5		28.1	47.6			9.5	55	0.5	43.9			8.6		32.2	55.8	L
8.9		53.9	32.7	B		9.3		42.6	11.5			9.5	33	15.0	26.3	aB		8.2		34.5	51.8	K		9.5		59.0	30.3	aB
9.4		57.3	46.6	aB		9.5		59.7	52.2			8.8		36.1	12.0			9.5		57.3	3.9			6.5	24	50.9	17.7	K
8.7	49	5.6	52.5			8.3	8	0.1	19.5	K		9.4	34	39.0	12.5	aB		9.0	56	26.2	32.7	K		9.2	25	15.1	58.6	
8.6		16.2	32.7	K		9.1		10.1	6.0			9.5		56.0	19.6			9.5		56.1	26.3			9.2		27.0	15.1	aB
9.5		28.5	47.2			9.3		18.1	10.3			9.2	35	35.1	47.9			9.3	57	20.0	33.0			9.3		44.6	43.0	
9.5		35.0	3.5			9.4	9	38.2	56.5			9.5		52.1	32.5			8.9		57.9	39.2	K		9.3		46.3	3.0	
9.5		42.9	33.0			9.0	10	21.6	30.6			9.5	36	26.9	25.1			9.5	58	9.5	49.9			9.3		58.5	35.1	
9.5	50	47.0	35.3	aB		8.0	11	36.6	38.2	B		9.3		50.5	5.5			9.5	59	13.2	47.2			7.8	28	52.6	3.8	L
9.4		52.2	51.6	a		9.4		55.3	31.8			9.5	37	2.0	43.8			9.5		17.9	9.7			9.5	29	48.9	55.8	aB
9.3	51	44.8	3.2			9.4	12	22.8	7.5			9.5		39.4	52.7			9.2		25.2	14.5	b		9.1		51.5	18.5	ab
9.2	52	21.6	51.9	b		9.5		53.0	58.2			9.4		44.7	53.5			9.4		26.4	59.6			9.1		55.5	1.5	a
9.4		26.5	27.8			9.4		55.1	8.8			9.1	38	1.2	58.4	a		9.5		33.0	43.8	aB		8.4	30	0.2	49.2	B
9.4		45.0	16.5	aB		9.3	13	29.8	29.4			9.5		44.0	28.5	aB		9.2		34.0	33.2	K		9.2		55.6	6.3	
6.0		53.1	2.3	K		8.4		30.9	13.6			7.0	39	10.0	49.7	K		9.2	0	36.3	34.2			8.4	31	59.0	16.0	K
9.4		58.5	11.5	a		9.1		32.5	29.3	a		8.8		17.6	53.1	K		9.2		52.7	35.8			9.3	32	18.5	45.7	
9.5	53	3.0	15.2	a		9.2		35.8	40.0	b		9.3		27.6	33.5			9.0	1	38.2	14.1			8.9		34.8	38.2	K
9.3		15.1	1.5			9.5		38.7	58.2			9.5		38.5	35.5			9.5	2	45.7	2.7			6.5	34	34.1	27.1	Kb
8.5		43.8	44.7	L		9.5	14	8.0	51.6			7.6	40	11.5	57.0	K		7.5		47.0	35 4	K		9.5	35	11.2	3.1	
9.3		49.5	50.1	aB		8.1		9.2	26.7	K		9.5		16.2	19.9			9.5		51.2	59.0	aB		9.1		42.3	0.4	K
8.8	54	52.4	58.1			9.3		12.3	17.9			9.1		47.8	7.5	ab		9.3	3	48.5	56.8	b		9.4		51.5	13.8	B
9.5	55	38.5	23.0			9.4		27.0	14.0	aB		9.5	42	37.7	53.5			9.0	4	28.0	14.3	D		9.3		53.5	7.7	B
9.3		42.5	51.9			9.4		42.6	53.1			9.5		41.5	33.9			9.0		28.2	19.2			9.3	36	5.1	40.2	
8.0		51.9	55.9	K		9.3	15	3.3	19.6			9.5	43	12.7	45.2			9.0	5	5.7	6.4			9.5		7.8	12.7	
9.5	56	4.6	36.1			8.1		20.5	52.2	K		9.5		33.2	43.8			8.5	6	11.3	24.4	Kb		8.9		10.7	45.1	
9.4		16.0	22.6	aB		9.5		22.6	33.1			9.4		43.0	58.2	aB		9.0	7	0.5	27.6	K		9.5		21.4	27.6	
9.5		20.5	39.3			9.1		23.8	51.8	K		9.5	44	17.5	53.2			9.5		3.0	22.4	aB		9.5		26.0	22.1	
9.1		35.2	27.7	ab		9.1	16	1.1	31.2	Rb		9.5		18.9	13.4			8.9		5.3	52.3			9.3		26.6	51.2	
9.5	57	14.5	8.5			9.4		45.5	16.7			9.3		39.4	59.3			8.7	8	10.0	0.3			8.0		32.5	27.0	L
9.3		31.5	54.8			9.4		56.8	51.3			9.4		41.2	55.8			9.5		21.0	36 9			9.3		50.7	26.1	
9.4		41.5	9.9			9.0	17	46.4	42.4			9.5	45	2.3	16.7			9.5		31.7	8.5			9.2	37	8.3	6.6	
8.5	58	32.5	18.2			8.7		54.5	8.0	K		9.5		3.8	7.6			8.1	9	12.8	48.0	K		7.4		25.2	23.6	K
9.5		46.2	3.4			9.3	19	15.7	2.7			7.9		17.2	54.1	Kb		9.5		53.0	55.2			8.4	38	51.3	23.0	K
9.3		49.8	36.8			9.4		20.0	27.5	aB		9.5	46	16.9	54.5			8.8		54.6	19.8	L		9.5	39	5.1	37.8	
8.8	59	4.8	24.4			9.3		30.8	52.3			9.5		41.2	35.5			9.5	10	57.0	50.6	aB		9.5		17.1	55.9	
		+	+					+	+					+	+					+	+					+	+	
10pr.		29.90	2.81			10pr.		30.01	2.95			10pr.		30.17	3.11			10pr.		30.31	3.22			10pr.		30.50	3.30	

5201—5209					5210—5218					5219—5227					5228—5235					5236—5243				
	23h		+6°			23h		+6°			23h		+6°			23h		+6°			23h		+6°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	39	52.5	58.3		9.4	43	55.5	32.5	*a*	9.5	48	58.4	4.6		8.8	52	2.3	58.6		9.4	54	31.2	38.0	
9.5	40	12.8	50.4		9.0	44	0.3	43.2	K	9.2	49	35.5	40.3	K	9.3		8.2	5.0		9.5	55	37.3	31.8	
8.0		51.3	22.6	K	8.3		30.6	39.7	K	9.4		38.4	2.5		9.5		11.8	21.2		9.5		43.3	8.7	
9.5	41	40.9	10.4		9.2	45	8.6	43.8	L	9.2		39.0	29.3	*aB*	9.3		35.9	43.1		9.4	57	7.6	27.8	R
9.5	42	0.1	5.0		9.5	46	49.5	1.1		8.7	50	13.1	36.4	Kb	9.3	53	30.9	22.5		9.5		32.9	8.9	
9.5		11.9	23.8		9.3	47	27.5	59.5	*b*	9.5	51	7.8	58.3		8.7		53.9	53.9		9.0	58	53.6	8.7	
8.4		44.1	14.5	K	6.8		44.1	15.8	K	9.3		29.9	33.1		9.0	54	0.8	53.4		7.8	59	40.9	4.5	K
9.4		59.8	20.7		9.5	48	24.8	12.4		9.5		42.3	38.9		9.3		26.9	32.4		8.0		51.5	53.9	K
9.3	43	52.4	5.4		9.4		31.5	28.3		4.4		53.7	3.9	K										
										10pr.		*30.65*	*3.34*											

Zone + 7°

1—40					41—80					81—120					121—160					161—200				
	0h		+7°			0h		+7°			0h		+7°			0h		+7°			0h—1h		+7°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	0	9.5	34.3	Kb	9.2	14	56.4	4.9	Kb	9.5	30	46.2	55.5		9.1	44	5.2	31.4	K	9.0	57	25.8	6.9	L
9.5		35.0	0.0	*B*	9.3	15	32.7	55.7		9.1		52.8	39.9	*a*	9.5		16.1	9.9	*aB*	9.0		39.1	5.6	Kb
9.3		40.5	17.9		9.5		37.3	27.9		8.0		54.7	48.1	*B*	9.5		56.5	54.0		9.5		39.3	43.2	
9.4	1	1.9	2.4		9.1	16	25.7	37.1	*ab*	8.8		58.2	28.3		8.5	45	0.0	52.8	K	8.2		50.7	33.1	K
7.5		23.2	13.0	K	9.3	17	39.2	3.7	R	9.3	31	28.5	41.0		9.5		14.4	35.0		9.5	58	36.9	1.4	
9.2		42.2	17.3	K	9.5		43.7	17.0		8.5		30.1	6.7	L	9.4		17.9	29.5		9.3		51.3	41.7	K
9.5		44.5	1.7		9.5		54.9	37.2		9.0		47.3	24.5	L	9.5		32.8	8.5		7.2	59	5.9	34.8	K
9.5	2	0.7	8.9		9.5	18	11.1	27.6		9.5		49.9	18.4		9.4	46	4.2	57.1		9.4		10.1	31.2	*aB*
6.4		24.2	38.9	K	9.5		44.9	46.1		9.1	32	2.0	25.3	*a*	9.5		28.0	48.3		8.2		20.7	52.5	K
8.6		30.2	46.3	K	9.4		48.0	45.3		8.1		12.5	19.3	K	9.5	47	7.3	39.3		9.1		22.4	5.4	Kb
9.5		31.3	51.0		9.4		50.4	15.4		9.2		24.0	0.6		9.3		9.2	47.5	Kb	9.5	0	5.2	2.9	
9.0	3	27.4	50.6		8.7	19	26.0	45.4	K	9.2		27.7	41.5	Kb	9.5		20.4	52.4		9.2		45.0	56.2	
7.5		49.6	8.5	K	9.5	20	18.9	25.9		9.5		44.3	53.6		9.5		23.9	1.5		9.5		51.3	24.2	
9.5	4	14.2	58.9		9.4		26.2	37.4		9.5	33	47.3	27.9		9.5	48	6.5	50.9		9.5	1	1.4	1.6	
9.4		35.3	45.4		9.5		35.9	50.7		9.4	34	23.6	21.1		8.8		52.3	32.4		9.4		28.5	19.5	
9.0		58.7	1.7	K	9.4		59.8	18.6		9.4		39.9	0.3		9.4	49	20.3	26.9	*aB*	9.0		38.6	31.0	
9.3	5	48.2	34.4		9.1	21	4.6	46.4	*a*	9.5		42.3	48.3		9.5		28.5	39.5		9.1		49.9	50.3	K
7.8	6	18.0	23.4	K	9.5		14.5	10.0		9.4		45.3	7.5		8.9	50	9.2	25.5		9.5		53.1	18.7	
9.4	7	43.3	39.6		8.1		22.2	35.3	Kb	9.1	35	18.8	55.1	*a*	9.5		18.2	26.5	*a*	9.5	3	17.5	20.2	
9.3		54.6	18.2		9.3		55.3	19.3	K	8.6		32.4	46.4	K	9.5	51	20.6	35.6		8.8		45.9	3.1	K
9.1	8	8.6	32.8		9.0	23	1.2	42.9	K	9.1	36	28.5	24.9	Kb	9.5		20.6	27.0		8.8	4	8.2	48.3	
9.5		34.8	53.3		9.5		47.0	22.5		9.4		55.3	1.6	K	9.5	52	12.2	42.0		9.4		23.9	10.6	*B*
8.0		37.9	18.7	K	9.5	24	21.9	53.3		9.4	37	41.3	44.2		9.3		38.3	38.2	Kb	9.1		34.1	32.2	*ab*
9.1		39.5	13.1	K	9.5		25.1	30.3		8.0	38	10.7	3.3	K	9.1	53	9.5	55.0	K	9.0		46.1	45.7	K
9.5		50.1	16.7		9.5		35.9	29.7		9.5	39	12.9	13.0		8.5		31.2	59.5	K	9.5	5	6.0	57.4	
9.0		55.9	34.2	Kb	9.5		45.0	5.9		9.0		23.0	30.6	K	8.2		40.2	15.2	P	9.5		9.6	32.6	
6.2	9	7.2	26.0	K	9.5		55.8	18.7		8.9		42.9	51.0	K	8.1		50.5	39.8	*B*	9.3		29.2	42.6	
8.7		42.0	5.9	K	9.1	25	8.4	28.7	K	9.4		52.6	37.7	*aB*	9.4	54	2.9	41.7		9.0	6	44.7	4.3	Kb
9.5		43.2	31.3		9.4		11.3	41.9		9.5		55.2	47.7		9.3		14.0	29.5		9.0	7	33.8	16.1	
9.5		47.5	17.6		9.3		25.2	28.8	K	9.5	40	15.9	43.6		9.5		24.8	47.5		9.5	8	23.9	5.7	
9.5	10	4.1	28.5		9.1	26	50.0	53.1	Kb	9.5		22.2	1.9	*aB*	8.0		35.3	9.6	K	9.5		43.1	23.6	
7.5		25.9	3.6	K	9.4	27	1.6	12.6		9.5	41	23.5	58.4		9.2	55	1.7	2.8	*aB*	9.1	9	20.4	43.8	*aBb*
9.5	11	27.9	27.5		9.5		3.3	38.0		9.5		25.1	53.6		4.2		26.0	6.3	K	9.0		24.7	24.7	
8.8	12	26.5	43.8	R	9.5		55.7	35.2		8.4	42	3.1	9.7	K	8.3		50.7	48.8	L	8.7		29.8	8.2	R
9.5		27.4	52.0		8.8	28	0.7	21.2	K	9.3		4.3	34.5	K	9.5	56	17.2	12.5		9.5	10	7.5	56.5	
6.2	13	8.7	22.8	Kb	9.3		21.5	0.2		9.5		6.3	2.6		9.3		21.6	9.5	*aB*	9.5	11	19.4	6.6	
9.5		55.2	13.6		9.5		41.5	11.0		9.3		54.2	14.0	K	9.1		23.3	42.3	*a*	8.2		54.4	36.4	K
9.5	14	14.9	18.9		9.5	29	5.5	35.0		9.3	43	18.4	19.6	K	9.5		34.5	55.8		9.5	12	47.8	35.9	
9.5		30.9	2.7		9.5		43.7	18.2		8.4		24.2	15.1	K	9.5		37.5	50.8		9.0	14	15.8	17.8	K
9.5		48.6	10.2		8.6	30	12.6	13.9	K	9.0		29.7	32.1		9.5	57	0.6	47.2		8.5		17.1	47.8	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.78*	*3.34*		*10pr.*		*30.89*	*3.32*		*10pr.*		*31.00*	*3.30*		*10pr.*		*31.11*	*3.26*		*10pr.*		*31.21*	*3.21*	

201—260

	1ᵐ		+7°	
m	′	″	′	
9.5	14	35.0	1.0	
9.4		38.8	7.2	
8.3	15	17.8	59.4	K
8.5	16	5.7	26.0	L
9.5	17	26.3	10.0	
9.5		33.3	5.0	αB
9.5	18	8.4	19.5	
9.5	19	9.0	2.4	αB
8.5		9.8	50.9	K
9.0		41.1	28.0	
9.5		45.8	47.0	
9.5	20	7.9	55.2	
7.0		47.1	12.2	K
8.5		51.6	11.9	K
8.8	21	3.2	40.0	B
9.5		27.9	2.3	
9.1		54.0	15.7	α
9.2		55.1	37.9	αBb
9.5	22	0.1	49.2	
9.5		23.2	12.5	
9.5		37.8	54.2	
9.3		45.9	35.0	
9.0		49.8	4.0	
9.0		56.4	25.0	
9.5	23	6.0	32.7	
9.5		15.0	11.5	
9.1		42.6	44.1	α
9.3		52.3	32.2	αB
6.8	25	43.9	27.9	K
9.0		55.5	17.6	K
9.1	26	16.7	54.9	R
8.9		24.0	37.5	K
9.0		34.9	28.9	K
7.3	27	17.6	31.7	K
9.2		56.4	3.6	Kb
9.5	28	30.9	55.8	
9.0		52.1	0.5	K
9.2		53.5	17.3	αB
9.2	29	7.0	23.2	αB
6.9		8.2	4.5	K
8.9		19.8	7.1	K
9.5		25.2	19.7	B
9.5		59.7	2.7	
9.5	30	1.6	7.7	
9.3		7.9	40.5	
9.3		26.0	29.9	
9.5		30.9	36.1	
9.5		37.3	36.0	
8.8	31	22.4	23.3	K
9.0		25.6	45.9	
9.5		31.9	35.8	
9.4		55.9	49.5	αB
9.0	32	2.4	27.2	R
9.4		4.0	35.5	
9.5		6.0	41.6	
8.6		10.7	40.1	Kb
9.4		12.5	53.2	
8.8		42.4	56.9	K
9.3	33	20.7	51.7	
9.3		34.5	44.5	
10pr.		+ 31.36	+ 3.11	

261—320

	1ᵐ		+7°	
m	′	″	′	
9.5	33	35.2	49.4	
8.7	34	0.1	10.1	K
8.7		3.5	27.8	
9.5		21.0	36.1	
9.5		50.3	58.5	
8.8		54.5	49.6	K
9.5	35	43.0	33.8	
8.8	36	24.1	43.8	
9.2		49.7	4.6	Bb
9.4	37	10.6	23.4	αB
8.8		12.5	41.3	
9.4		48.6	59.0	
9.4		52.7	3.2	
9.2		58.2	59.5	R
7.3	38	5.4	49.7	R
9.3		10.2	23.3	
9.5		26.7	50.7	
9.5		55.0	51.3	
9.5	39	12.3	35.7	
9.3		13.6	32.0	K
9.4	40	25.0	11.9	
9.5	41	24.1	35.7	
9.5		39.0	34.7	
9.3		40.2	2.4	
9.3	42	6.5	22.7	
8.2		15.2	9.7	K
9.5		19.3	9.4	
9.5	43	2.9	13.5	
8.0		28.8	49.9	Kb
8.6		40.3	48.0	K
9.0		55.9	41.4	K
9.0	44	21.0	21.0	
9.4	45	13.0	15.2	αB
9.5		58.7	44.8	
9.2	46	13.2	7.6	K
9.5	47	6.2	13.5	
9.3	48	4.4	4.5	
9.5		37.5	13.5	
9.5		43.0	38.7	
8.2		43.2	47.1	K
9.0	49	1.7	32.2	K
9.5		22.0	21.5	
9.5		39.7	23.5	αB
9.5		41.0	43.9	
9.4	50	24.4	14.5	
9.5	51	2.4	9.2	
9.5		9.2	39.3	
9.5	53	2.3	9.8	
8.6		5.4	30.7	R
9.5		12.4	22.1	
9.5		35.6	57.7	
9.5	54	10.5	50.2	
7.3		13.3	9.9	B
9.5		42.7	48.6	
8.5	55	4.6	5.2	K
9.0	56	1.8	27.3	B
7.5		22.0	23.6	K
8.7		26.5	57.3	K
9.4		42.0	17.7	α
8.7	57	6.6	9.6	K
10pr.		+ 31.49	+ 3.00	

321—380

	1ᵐ—2ᵐ		+7°	
m	′	″	′	
7.0	57	14.0	2.2	K
9.5		19.3	37.7	
9.5		58.7	19.1	α
7.0	58	34.5	33.0	K
9.5		45.8	5.5	
9.0		50.2	1.1	
9.3		53.0	57.8	
9.0	59	5.4	40.6	K
9.5		17.3	44.7	
9.5		36.5	51.7	
9.4	0	14.4	55.1	
9.0		33.0	52.7	
9.5		37.7	36.4	
8.5		40.3	47.4	K
9.0	1	1.5	10.5	
8.8		20.4	44.1	K
9.5		38.7	7.6	
9.0		50.9	55.1	K
9.5	2	2.5	37.9	
9.5		3.9	34.7	
9.5		21.6	6.2	
9.5	3	1.4	59.3	
9.5		2.1	2.7	
9.3		6.4	11.5	
8.5		9.3	39.1	K
9.2		33.3	50.5	K
6.3		43.0	53.4	K
9.4		59.2	57.2	
9.5	4	9.9	19.8	
9.5		28.6	1.2	
8.8	6	32.4	21.5	Kb
9.4	7	37.3	6.5	
9.5	8	7.5	30.9	
9.5		14.5	44.5	
9.2		28.8	31.4	Rb
9.5		37.0	38.2	
8.8	9	4.1	0.1	
9.5		35.5	31.9	
9.5		44.0	2.0	
9.5		50.6	58.8	
9.3		55.0	17.0	
7.5	11	1.7	31.2	K
8.0		5.6	2.2	K
9.3		16.0	58.8	K
9.3		40.5	46.9	
9.0	12	23.9	11.0	
8.5	13	26.5	43.4	K
8.6		28.9	6.2	K
9.0		33.5	30.0	
9.5		48.0	48.4	
7.5		54.0	5.2	K
9.4	14	0.6	33.3	
9.5		9.2	41.3	
9.5		17.9	40.0	
8.2	15	15.0	52.9	Kb
9.5	16	26.5	25.5	
9.5		58.8	37.2	
9.0	17	6.7	1.8	
9.3		14.0	58.0	
9.0		28.1	53.3	K
10pr.		+ 31.64	+ 2.85	

381—440

	2ᵐ		+7°	
m	′	″	′	
9.0	17	58.1	21.2	
9.5	18	35.0	7.9	R
9.3		36.0	11.1	
9.5	19	43.5	37.5	
9.3		50.2	3.4	
9.5		55.5	15.3	
9.5	20	24.0	6.6	
4.5		27.7	48.4	K
9.0		47.6	58.8	
9.0		51.0	37.5	
9.5		53.5	23.3	R
8.8	21	4.2	4.5	
8.6		15.0	43.7	K
8.3	22	1.9	50.7	K
9.5	23	1.0	33.0	
8.5		46.7	42.0	Kb
9.5	24	21.0	13.9	
8.5	25	16.7	15.0	K
8.5		33.0	44.1	K
9.3	26	8.8	42.3	
9.5		20.0	25.7	
6.5	28	55.7	5.3	K
9.5	29	7.5	24.3	
9.0		26.5	51.4	
7.3	30	20.7	4.1	K
9.2		41.0	56.0	
8.8	31	41.5	43.1	K
8.5	32	4.4	32.9	K
9.0		18.9	8.2	
9.0		30.5	15.3	
8.0	33	12.5	36.5	K
7.7		40.6	53.2	Kb
8.5	34	5.2	3.6	
9.3		21.5	35.1	
9.5		28.5	8.7	
9.0		43.0	34.8	
9.5	35	2.0	42.1	
9.3		59.5	25.0	
9.4	36	32.8	53.3	
9.3		34.0	47.3	
8.5	37	37.9	8.0	K
9.3		48.0	38.9	
9.3		53.0	36.8	
9.5	38	55.5	2.4	
9.0	39	3.0	36.8	
9.4		4.8	47.5	
9.5		13.1	46.0	αB
9.0		45.5	0.8	K
9.0	40	17.5	18.8	
9.3		37.0	56.2	
8.8		46.4	56.7	K
9.1	41	8.0	59.3	B
9.5		17.0	57.3	
9.5	42	28.0	35.1	
9.5		33.0	33.4	
8.5	43	28.5	41.0	K
9.5		38.5	36.1	
9.3	44	14.5	57.3	
9.3		18.0	51.0	
9.3		37.5	7.0	αB
10pr.		+ 31.81	+ 2.62	

441—500

	2ᵐ—3ᵐ		+7°	
m	′	″	′	
9.0	44	55.3	4.5	
8.8	45	26.3	6.6	B
7.7	46	39.9	5.0	K
9.5		40.5	34.1	
9.0	47	25.8	53.3	
8.8		34.5	33.7	R
9.5		58.0	23.9	
9.3	48	12.0	21.2	
9.0		20.0	19.8	
6.8		30.7	47.9	Kb
9.2		43.0	11.4	αB
9.5		58.0	34.4	
8.3	49	22.2	4.0	K
9.3		26.0	58.8	
8.5		45.5	11.2	K
9.0	50	13.5	34.7	R
9.5		24.5	46.5	
9.5	52	13.7	25.5	
8.3		17.0	10.1	L
9.4		24.8	18.7	αB
9.0	54	1.0	17.4	
8.5		3.7	34.1	K
9.3		7.5	9.4	
9.0		18.8	26.0	
9.0		24.5	17.0	
8.3	55	2.1	53.9	K
9.5	56	45.7	56.2	
9.5		47.4	39.6	
9.3	57	4.0	31.5	
9.3		4.7	50.0	
9.5	58	2.7	12.5	
9.5		18.0	10.3	
9.3		40.2	19.4	
9.3		42.7	45.1	
8.8		50.0	39.2	Kb
8.5	59	34.5	50.5	K
7.7	0	45.7	5.2	L
6.6		53.8	54.2	Lb
9.0	2	4.7	54.5	
8.8		33.0	13.2	
8.5	3	57.4	34.6	K
9.3	4	53.3	52.5	
9.5		55.0	34.1	?
9.5		59.4	7.8	
9.2	5	19.5	34.9	αBb
8.8		49.0	15.2	K
9.5	6	42.7	58.8	
9.5	8	5.5	54.4	
9.5		40.4	29.8	
9.5		41.4	21.8	
9.5		50.5	39.1	αB
9.5	9	20.4	31.6	
7.5		40.5	7.5	K
8.5		47.5	9.4	K
9.0	10	27.5	2.0	
9.5		40.3	55.1	
9.1	11	55.4	29.8	ab
9.0	12	22.0	22.9	
9.2		38.7	55.3	αK
8.3	13	15.3	56.0	K
10pr.		+ 31.95	+ 2.38	

m	3ᵐ	+7°		
	′	″	′	
9.3	13	34.0	31.6	
9.4		43.6	6.0	αB
9.5		52.4	39.2	
9.5	16	49.3	52.8	
9.5	17	13 4	42.0	
9.2		39.5	53.6	K
9.0	18	14.3	45.0	K
9.3	19	30.2	39.4	αB
9.5		35.9	29.8	αB
9.0		46.9	34.5	B
8.0		52.2	13.7	Kb
9.5	20	7.9	58.0	
9.5		9.5	6.8	
8.7	23	6.5	52.1	Kb
9.4		27.2	1.2	
8.3	24	0.7	19.3	K
8.2		19.1	4.5	K
9 5	25	5.8	43.6	
9.5		7.5	24.2	
9.5		56.4	5.8	
8.7		58.9	47.6	
9.2	26	57.5	46.4	b
9.4	30	2.0	30.6	αB
9.5		48.2	54.7	
9.5		57.8	49.6	
9.0	31	13.8	7.7	
9.5		27.1	35.8	
9.2		43.2	39.2	αBb
9.0	32	28.2	37.0	
7.7		31.4	7.1	K
9.2	33	22.4	8.8	
9.5		46.0	6.5	
9.0	34	1.3	29.7	
9.5		10.5	53.4	
9.5		11.2	15.4	
8.3		35.5	4.9	K
8.3		59.2	25.9	K
9.5	35	34.3	7.5	
9.5		39.0	27.0	
8.5	37	10.5	50.9	
9.5		22.8	39.2	
9.3	38	26.2	13.7	
9.5	39	43.5	30.4	
9.5		43.9	0.9	
9.5	40	3.2	56.5	
9.0		4.5	56.2	
9.0		6.8	29.4	
9.5		27.5	54.9	
9.5		27.5	36.7	
9.5		57.8	58.5	
9.5	41	0.5	47.4	
9.3		29.3	11.9	K
9.0	42	29.8	11.7	
9.5		52.8	18.5	
9.4	43	1.0	45.5	αB
9.3	44	18.3	27.2	
9.5	45	3.2	4.1	
9.5		3.7	47.8	
9.0		12.5	51.3	K
var		25.7	20.6	K
10pr.		+ 32.13	+ 2.00	

501—560

m	3ᵐ—4ᵐ	+7°		
	′	″	′	
9.2	45	28.2	48.7	
9.5		35.5	31.5	
9.5		36.0	25.1	
9.0	46	12.3	22.4	
9.2		22.8	44.0	
9.5		59.3	30.8	
9.5	47	14.1	55.9	
9.0		41.6	8.7	
9.5		42.8	16.9	
9.5	48	2.2	33.5	
8.5		41.1	9.2	K
9.5	49	16.6	10.8	
9.0	50	14.9	54.8	
9.5		17.3	20.4	
7.8		28.6	11.5	K
8.1		36.5	3.3	B
8.8		40.5	56.9	
9.5		45.6	6.3	αB
9.3		56.2	30.4	
9.5	51	57.6	11.7	
9.5	52	9.9	51.2	
9.0		18.5	53.7	
9.0	53	11.0	26.2	Kb
9.0		42.3	44.3	
8.5	54	2.9	11.4	K
9.5		50.8	22.7	
9.5		59.6	44.2	
9.5	55	3.7	58.1	
7.8		9.6	43.6	K
9.5		30.3	30.1	
9.2	56	4.7	38.1	
5.9		7.1	47.6	K
9.5		9.3	34.1	
9.4		25.2	5.3	αB
9.0	57	54.3	18.6	K
9.5	58	56.2	36.7	
8.7	59	5.7	48.1	K
9.5		29.8	9.6	
9.5		59.7	46.3	
9.0	0	20.9	54.0	K
9.5		30.8	55.7	R
9.5		39.3	24.8	
9.5		48.7	18.2	
9.5	1	30.8	44.0	
9.5		56.7	24.9	
9.1	2	10.0	8.0	K
8.3		18.6	18.5	Kb
9.5		27.1	51.0	
9.5		47.3	2.3	
9.2	3	29.1	54.5	K
9.4		46.3	36.4	
9.5	4	4.8	3.6	
9.5		10.2	41.4	αB
9.4		26.3	41.4	αB
9.5	5	16.3	30.8	
9.5		37.3	46.1	
5.5		44.8	20.7	P
9.2	6	17.3	48.5	b
9.5		39.1	14.6	
8.3	7	15.9	2.1	K
10pr.		+ 32.22	+ 1.72	

561—620

m	4ᵐ	+7°		
	′	″	′	
9.2	7	20.4	3.9	K
9.5		51.0	17.3	αB
9.5		53.2	12.7	
9.0	8	15.5	11.1	
9.2		33.0	36.3	b
9.5	9	23.8	12.2	
9.3		43.3	34.7	
9.4	11	23.7	19.4	
9.0		59.5	56.1	
9.3	12	13.0	44.6	αB
7.8		27.8	29.8	K
9.3		38.8	11.6	
9.3	13	56.8	52.3	
9.5	14	49.3	57.7	
9.5	15	11.8	32.2	
9.3		21.3	5.5	
8.3		47.3	43.6	K
9.5	16	21.2	6.8	αB
9.5		30.0	52.2	
9.5		34.9	3.0	
9.5		54.9	6.5	
9.3	17	27.1	4.1	
9.5	18	19.3	33.2	
9.5		32.8	57.2	
9.5		33.3	43.6	
9.2	19	42.2	2.1	b
9.5		54.7	5.4	
7.0	20	14.6	49.7	L
9.3		21.8	16.6	
9.3		41.8	49.8	
9.2	21	14.8	30.5	Bb
9.4		18.8	13.8	
9.2	22	12.6	52.7	
9.4		41.3	26.0	
9.3	23	8.1	58.4	B
7.5		19.6	0.5	K
9.0		22.3	49.2	K
8.0		27.8	8.8	K
9.0		33.8	31.1	K
9.1		37.8	37.8	α
9.5	24	2.3	32.0	αB
9.5		5.7	30.0	
9.3		24.6	33.2	αB
9.2		28.8	49.2	
9.5	25	15.7	9.6	
9.5		24.3	15.2	
8.3	26	31.3	53.0	K
8.3	27	0.8	8.6	K
9.5		18.8	28.1	αB
9.5		36.8	7.4	
8.2	28	18.0	55.6	K
9.2	29	30.5	10.7	
9.1		46.8	48.2	
9.5		49.2	56.9	
9.5		55.8	22.2	
7.0	30	6.6	1.4	K
9.3		33.3	31.1	
8.2		44.6	52.6	K
9.0	31	0.3	39.2	K
9.5		10.7	34.3	αB
10pr.		+ 32.31	+ 1.40	

621—680

m	4ᵐ	+7°		
	′	″	′	
5.8	31	15.3	34.7	K
9.5		21.8	29.4	
8.0		24.3	41.9	K
9.5		38.0	52.7	
8.6		40.1	15.2	
9.5		40.3	41.9	
9.2	32	11.4	2.1	
8.0		31.8	31.1	K
9.4		50.3	48.2	
9.3	33	1.3	38.9	
9.0		19.8	59.8	K
9.5		24.3	24.6	K
9.0		50.3	31.9	K
9.5		58.8	42.3	αB
9.5	35	3.8	37.1	
9.0		4.6	12.0	K
8.5		5.3	17.7	
9.2		24.8	45.4	K
9.5		25.8	52.0	
9.5		43.2	59.7	
9.4		47.3	10.6	
9.5	36	4.8	15.6	αB
9.4		15.8	10.0	
9.1		17.5	28.0	α
9.0		49.0	50.7	K
9.5		58.2	1.5	
9.5	37	3.2	22.8	
9.0		5.5	47.7	K
9.2		24.3	16.7	α
9.0		30.8	42.8	K
8.8		36.9	19.1	
9.5		48.6	45.5	αB
9.3	38	16.9	20.1	
8.5		38.8	4.6	
9.5	39	1.7	56.8	
9.5		2.9	54.1	
9.2		7.0	14.4	
9.5		30.5	3.9	αB
9.4		34.2	29.8	
9.5		40.6	10.5	
9.0	40	1.2	30.6	
9.5		18.8	47.4	αB
9.5		22.3	42.6	
9.5		30.8	38.1	αB
7.7		50.3	35.1	Kb
9.1	41	14.9	42.3	
9.5		42.2	23.6	
9.5	42	7.0	7.4	B
9.5		7.5	41.5	
8.5		9.5	25.9	
9.5		49.5	55.8	
9.4		52.6	46.5	
7.5		59.5	44.6	B
8.7	43	0.1	26.4	B
8.8		0.7	27.5	
9.0		1.8	37.7	
8.5		12.5	26.8	K
9.5		18.6	26.5	
9.5		21.0	28.5	αB
9.5		27.3	30.7	
10pr.		+ 32.36	+ 1.17	

681—740

m	4ᵐ	+7°		
	′	″	′	
8.8	43	30.5	10.7	K
9.0		30.9	37.7	
9.0	44	15.8	53.6	K
9.3		47.0	52.6	
9.5	45	8.1	30.1	
9.5		10.6	8.1	
9.5		12.3	3.7	
9.3		26.5	33.2	
8.5		32.9	26.0	
9.5	46	3.5	24.9	
9.5		4.5	14.8	
9.5		17.9	42.6	
9.5		23.5	22.8	
8.1		26.0	8.3	K
5.7		58.2	32.9	K
8.8	48	4.4	9.3	K
9.0		8.9	30.5	
9.5		17.3	3.0	
6.8		19.5	40.1	K
9.5	49	6.4	20.3	αB
9.4		20.7	18.2	αB
9.3		34.0	23.3	
8.8		53.4	4.5	
9.4	50	24.2	30.0	
9.5		25.0	27.4	
9.5		46.9	42.9	
9.5		55.0	50.3	
var	51	6.0	54.2	
9.5		21.9	35.4	
9.0	52	28.2	19.1	
9.5	53	4.5	41.2	
9.5		11.5	41.6	
9.5		21.6	19.4	
8.3		21.6	39.5	
9.5	54	0.9	4.2	
9.3		8.5	17.0	
8.5		36.9	15.6	L
7.5		42.9	13.2	Lb
9.4		47.2	57.5	
9.3		58.9	14 9	
9.5	55	5.5	39.1	
8.8	56	13.5	25.4	K
9.0		18.7	8.5	
8.8		18.9	36.4	K
8.3		29.0	58.6	
8.7		33.2	23.1	
7.3		36.9	37.4	K
9.5		37.0	49.2	
9.0		51.3	35.0	K
8.9		52.5	3.7	
9.2	57	5.0	4.9	
9.3		30.2	37.8	
8.0		31.6	22.0	K
8.5		35.9	45.4	Kb
8.9		39.9	29.0	
8.7		52.6	58.3	
9.4	58	8.4	58.3	
9.5		13.3	19.4	
9.5		21.1	2.8	
9.3		41.8	24.9	
10pr.		+ 32.40	+ 0.97	

741—800

801—860					861—920					921—980					981—1040					1041—1100				
	4ᵃ—5ᵃ		+7°			5ᵃ		+7°			5ᵃ		+7°			5ᵃ		+7°			5ᵃ		+7°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	58	41.9	15.8		9.5	11	1.5	44.1		9.5	24	7.5	55.3		9.3	34	53.3	23.6		9.4	45	41.4	10.2	
8.8		53.0	53.8	K	9.4		4.4	14.6		9.3		8.8	37.3		9.5	35	6.7	34.4		8.8		46.5	41.1	K
9.5	59	4.0	35.4		8.9		9.0	38.8		9.4		22.3	58.1		8.3		11.8	14.6	K	9.5		47.0	3.3	B
9.5		6.0	55.1		9.5		33.6	1.3		9.3		39.6	20.5		9.0		12.3	15.5	D	9.4		48.1	32.5	αB
9.3		6.1	15.7		9.2		36.2	23.0		8.9		53.8	26.1		9.3		21.7	22.3		9.4		49.5	8.2	α
9.0		11.3	30.3	K	9.5		46.2	39.0		8.0	25	6.1	13.7	K	9.5		28.0	43.3		9.5		52.7	26.8	αB
9.5		23.7	44.0		9.5	12	5.0	58.3		9.5		7.0	27.3		9.1		32.8	5.8	α	9.5	46	11.2	9.4	αB
9.5		25.7	38.5		9.5		6.8	31.4	αB	9.3		16.1	27 5		8.6		44.4	49.9		8.9		12.3	40.9	K
9.5		29.3	11.3	αB	9.0		23.7	59.3		8.2		24.3	2.1	L	8.5		50.2	53.9	L	9.5		16.7	10.7	
9.5	0	6.5	2.6		9.2		37.6	42.1		9.5		34.1	44.1		9.3		56.1	17.4		8.9		47.3	5.3	
8.9		10.0	47.5	K	9.0		44.9	50.2		9.5		37.2	50.9		9.5	36	1.5	33.2		9.5		50.9	48 0	
7.4		14.3	42.1	K	9.0		52.2	14.7	K	9.5	26	13.3	54.0		9.5		4.7	20.1		9.5		57.0	53.0	
9.5		24.5	25.7		9.5	13	14.8	43.7		9.2		33.1	34.5	b	9.0		11.9	21.6		9.5		57.2	59.3	
9 1		38.4	33.0	αb	8.8		42.1	30.8		9.3		49.8	27.2		9.2		18.8	29.8		8.3	47	3.2	0.2	K
9.5	1	21.1	51.6		8.0	14	16.0	51.3	B	9.5	27	15.5	48.8		9.5		51.3	49.9	αB	var		20.3	22.7	K
9.5		44.0	28.3		8.2		27.1	3.3	B	9.5		35.7	46.4		9.3	37	1.0	1.4		9.5		46.0	59.6	
9.3		59.6	43.7		8.5		40.0	2.1	K	9.4		36.6	31.8		9.5		25.6	55.4		9.5		57.7	28.5	
9.3	2	5.6	23.4		9.3	15	21.3	13.4		8.9		40.4	17.0		9.0		26.3	20.3	K	9.5	48	5.7	23.2	
7.6		7.7	59.4	K	8.5		23.7	32.6		8.5		40.9	9.3		9.0		30.3	42.4		9.5		12.5	51.2	
9.2		12.9	47.1		9.3		58.9	30.5		9.4		52.7	38.3		9.5		46.0	8.1		8.5		12.5	49.4	
9.5		15.8	27.7	αB	8.9	16	3.2	7.3		9.3		57.7	33.4		9.5		53.1	48.9		9.0		17.2	43.3	K
9.2		24.2	0.7		9.0		32.1	43.3		8.9	28	29.0	57.1		9.5	38	12.1	37.3		8.9		22.6	28.0	
9.5		24.5	32.1		9.3		40.8	39.8		9.3		40.6	56.8		9.5		25.5	43.9		8.5		52.6	12.4	K
9.5		26.9	6.8		9.5		45.0	25.6		9.5		43.0	18.3		9.5		45.0	5.4		9.5	49	2.5	54.6	
9.5		37.5	23.6		9.4		55.0	11.8		9.5		44.5	51.3		9.3		55.7	43.7	α	9.5		27.4	4.8	αB
9.3		49.1	21.1		9.5		58.1	8.7		9.5		53.5	34.9		9.5	39	9.0	37.5		9.5		45.7	5.0	αB
9.0	3	2.0	24.7	K	9.5	17	15.0	52.9		9.5	29	2.0	41.3		8.6		11.1	59.0		9.5		53.3	42.2	
9.3		7.2	51.8		8.4		15.4	3.1		9.5		5.9	2.4		8.5		13.8	31.2	K	9.3		57.5	28.9	
9.4		19.0	19.0		9.4		21.7	44.0		9.0		10.1	32.7		9.0		26.3	27.3	Kb	9.2	50	2.2	20.7	b
9.0		22.9	19.7	B	8.4		33.6	6.3	K	9.5		16.1	52.9		9.5		36.3	28.0	α	9.5		8.3	10.3	
9.0	4	25.1	17.7		8.9		54.1	41.5	K	8.5		30.4	33.9	L	9.3		42.3	18.8		9.1		15.2	2.0	α
9.3		29.0	46.8		9.5	18	8.5	44.8		8.9	30	5.3	9.0		9.3		43.9	0.2		7.6		35.4	50.4	K
9.3		31.6	39.7		9.5		56.7	51.0		6.1		10.9	26.9	Lb	9.5		49.2	57.3		8.3		40.0	55.5	K
9.5		41.0	13.4		9.5		59.2	25.7		9.5		16.7	29.1		7.8	40	3.6	54.3	K	9.0		40.2	5.4	
9.5		55.0	28.4		7.8	19	7.0	56.9	K	9.5		33.0	37.7		9.5		28.5	23.7		9.5		47.0	35.0	
9.5	5	3.2	56.9		7.9		10.1	2.1	K	8.5		55.1	57.1	K	7.5		40.7	30.2	L	9.5		48.0	25.1	
9.4		11.1	2.4		9.3		44.8	36.0		9.5	31	0.4	38.3		8.5		41.3	49.9	K	9.5	51	15.0	54.9	
9.3		29.4	34.5		9.2		49.6	47.3		9.5		10.5	30.1		8.2		53.2	49.8	K	9.4		15.5	13.2	
9.0		31.9	17.2		9.5		52.5	26.6		9.5		12.7	49.6		9.5	41	2.5	5.5		9.4		17.2	0.6	
9.4		41.3	0.4	αB	9.2		54.2	53.3		8.9		14.5	27.8	K	9.5		12.6	43.8		9.5		21.7	42.6	
8.5	6	8.4	14.4	Kb	9.5		57.8	12.9		9.5		21.4	21.0		9.5		35.3	25.7		9.5		27.3	40.8	
9.3		18.3	11.4		9.5	20	36.9	33.7		9.5		29.1	19.5		9.5		36.1	43.4	αB	9.4		47.9	44.5	
9.3		18.8	53.3		9.5		38.0	11.5		9.5		29.8	34.8		9.5		40.4	32.5		9.2		51.4	16.8	
9.5		31.5	32.4		9.4		55.1	43.5		9.5		37.4	30.0		9.3	42	39.6	4.8	K	9.3	52	20.2	21.3	R
9.5		37.5	45.4		9.4	21	30.0	21.0		9.5		50.0	57.3		8.9	43	2.8	26.2	K	9.5		38.1	5.3	αB
8.9	7	9.5	24.3		9.2		34.4	9.2		9.0		53.2	13.9	Kb	9.5		10.0	39.2		9.5		41.0	10.7	αB
9.5		11.3	54.7		9.5		35.5	3.2		9.3	32	4.3	35.2		9.5		17.8	10.2	αB	9.5		44.7	26.8	
9.0		27.5	31.6		9.5	22	2.2	4.7		9.2		10.0	4.0	B	9.1		27.1	54.4	α	8.8		54.6	18.0	
9.3	8	5.2	21.3		9.2		28.3	40.5		9.5		21.1	33.0		9.1		48.3	29.8	K	9.4		55.8	56.3	
8.7		15.2	1.8		9.2		36.5	57.5	αBb	9.3		22.8	5.3		9.5	44	7.1	44.5		9.5	53	0.5	52.4	
9.2		41.1	34.7		8.5		47.2	20.6	K	9.5		42.1	30.3		9.2		18.3	41.5		9.0		10.0	3.7	
9.5	9	1.0	52.9		9.0		58.7	26.4		9.5	33	0.2	56.9		9.5		24.4	38.0		9.1		19.7	6.0	αR
9.5		27.0	28.9		9.5	23	4.0	40.9		9.5		3.1	39.7		8.1		27.5	17.6	L	9.0		30.0	50.8	K
9.4		32.5	55.0		9.3		29.7	0.8	α	9.5		9.5	56.7		8.6		44.5	30.7	K	9.1		41.0	9.1	α
8.0		52.1	12.0	B	8.3		34.4	25.8	L	9.0		44.6	25.3		9.3	45	2.8	58.8		8.5		41.9	35.9	
9.5	10	1.0	27.1		9.4		35.0	32.2	αB	9.5		58.6	45.0		9.5		8.4	56.3		9.5		53.5	6.2	
7.8		4.6	56.4	Lb	9.5		53.5	32.2	D	9.5	34	43.0	5.0		9.5		25.3	35.0		9.5	54	24.1	38.7	
9.3		15.7	16.5		9.3		59.5	34.0		9.5		44.3	23.2		9.5		28.5	27.1		9.0		43.8	20.9	
9.5		45.0	40.0		9.4	24	0.0	55.2		9.2		45.5	3.2		9.2		36.4	5.2	αB	8.3		44.2	41.1	K
9.5		55.0	37.8		9.5		4.5	29.9		9.5		47.1	55.4		8.7		39.7	37.0	K	9.2		49.6	56.0	
		+	+				+	+				+	+				+	+				+	+	
10pr.		22.43	0.81		10pr.		32.45	0.61		10pr.		32.46	0.44		10pr.		32.47	0.29		10pr.		32.48	0.14	

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5ᵘ—6ᵘ	+7°			6ᵘ	+7°			6ᵘ	+7°			6ᵘ	+7°			6ᵘ	+7°	
m				m				m				m				m			
9.5	54 51.3	57.6		9.4	2 49.0	6.7		9.0	9 29.7	29.4	K	8.8	18 10.7	32.6		9.2	25 43.0	1.0	
9.5	55 11.3	51.4		9.4	57.3	20.7	αB	9.5	31.4	30.5		9.4	19.8	13.2	α	9.5	56.1	59.6	
7.7	19.3	37.1	Kb	9.1	57.6	35.3	α	9.5	43.8	17.2		9.4	20.7	10.7	B	8.5	57.3	20.8	L
9.5	24.0	14.2		9.0	58.5	41.5		9.5	45.8	31.8		9.5	27.8	44.5		9.3	57.4	8.3	
9.4	37.9	2.8		9.5	3 1.7	10.5		9.5	10 0.5	54.1		9.5	34.7	6.0		9.5	26 4.9	32.3	
9.5	43.1	30.3		9.5	4.7	19.8		9.3	2.4	37.1	αB	9.5	36.3	13.0	α	9.5	5.3	40.5	
9.5	44.8	10.0		9.5	15.2	23.6		9.5	12.9	36.2		8.9	37.4	41.2		9.5	6.1	48.3	
9.5	52.1	11.3		9.5	24.6	6.0		9.4	13.1	14.1		9.5	37.8	8.5		9.4	13.4	4.1	
9.5	57.3	50.1		9.2	25.8	51.1		9.5	13.5	19.5		9.5	42.5	8.7	B	9.5	15.8	14.1	
9.5	56 11.7	5.2		9.1	29.3	20.9	α	9.1	24.9	33.6	K	9.1	54.1	11.1	αB	9.5	27.4	45.4	
				*															
9.5	27.8	34.4		9.3	49.2	37.7	αB	9.0	30.4	48.5		9.4	19 14.0	41.2		9.5	27.5	51.0	
9.5	29.8	3.2		7.9	49.5	48.5	K	9.3	40.1	25.9		9.5	15.1	15.1		8.5	27.8	19.5	L
9.4	34.2	51.5	B	9.2	49.9	21.6	B	9.5	47.4	32.3		8.7	32.7	1.3	K	9.2	33.4	46.4	
9.5	39.1	22.7		8.8	54.4	38.3	K	9.0	51.8	33.0	K	9.5	33.6	52.4	B	8.5	34.3	24.6	L
9.5	48.6	14.5		9.5	55.7	11.2		9.5	11 0.7	48.4		9.5	41.7	27.4	αB	8.5	44.4	53.3	
9.4	49.9	49.5		9.4	56.6	43.0		9.5	1.9	46.0		9.3	42.5	0.0	αB	8.6	47.5	47.6	
9.0	50.6	18.1		8.4	4 4.7	6.8		9.5	14.7	48.8		9.5	45.2	55.0		7.5	55.3	40.9	L
8.1	57 19.9	7.8	Kb	7.4	6.8	25.6	K	9.5	17.8	0.0	αB	8.7	20 4.2	12.6	L	9.4	27 3.3	3.0	
8.9	21.5	53.8		9.5	22.5	56.2		8.4	18.3	18.0	K	9.4	9.8	24.6		9.3	5.5	19.0	
9.1	28.8	59.9	α	9.1	27.7	46.1	α	9.5	40.5	45.1		9.5	21.9	8.9		9.3	6.4	10.1	
9.0	45.3	32.0		9.3	34.5	21.2		9.0	12 16.5	14.2		9.5	25.8	26.6		9.1	14.2	27.0	α
9.5	47.5	59.3		9.1	35.5	58.1	α	9.5	23.5	55.8		9.2	27.1	21.8	α	9.5	19.9	1.6	
9.5	49.8	4.7		9.5	38.7	33.7		7.2	25.6	46.7	L	8.9	21 9.0	1.7		9.3	21.7	0.3	
9.4	50.6	13.5	R	9.5	58.6	29.1		9.4	35.3	28.9		9.5	9.6	30.5		9.1	31.0	41.9	αB
9.5	58 0.0	53.7		8.2	5 7.1	18.9	K	9.3	35.5	44.5		9.5	20.5	41.1		9.2	42.1	23.1	αB
9.5	3.6	57.8		8.2	9.6	34.2	K	8.5	47.5	37.7		8.3	31.8	35.7	L	9.5	44.9	5.5	
9.5	17.6	17.4		9.3	19.2	11.2		8.5	58.4	31.9	Lb	9.4	34.5	18.0		9.5	28 16.5	58.5	
9.5	25.6	59.1		9.3	27.6	57.6		9.5	13 4.0	58.4		9.3	34.9	2.8		9.2	18.1	10.5	b
9.5	28.0	1.0		9.5	30.1	27.8		8.2	14.9	35.7	L	9.5	35.8	41.7		9.2	41.4	50.2	K
9.5	36.0	59.7		9.5	31.0	5.7		9.5	17.3	43.3		9.5	37.5	51.7		9.2	49.6	36.2	
8.5	44.4	30.8	K	9.5	35.3	12.2		9.2	20.5	21.8		9.2	54.7	25.4		9.5	51.5	21.3	
9.5	59 5.1	18.8		9.5	38.4	46.4		8.9	32.7	0.3		8.5	22 0.2	13.7	L	9.5	29 1.2	42.5	
9.5	13.7	52.9		9.5	41.5	24.8		9.5	41.6	32.6		9.4	3.9	54.8		9.5	5.1	9.7	
9.1	15.4	56.3	α	9.4	6 1.6	59.6		9.0	52.2	15.4		8.2	7.0	12.1	L	9.0	12.1	22.0	K
9.5	18.2	48.9		9.1	3.7	0.2	K	9.5	58.5	59.0	αB	9.5	10.1	40.9		9.3	22.0	46.6	αB
9.5	19.9	39.3		9.0	5.9	54.7		9.5	59.0	57.8		9.2	17.2	0.3	α	9.5	26.7	32.8	
9.5	23.2	43.0		9.5	11.0	7.6		9.3	14 2.4	44.4		9.4	28.1	17.8	B	9.5	40.2	15.9	αB
8.7	40.2	55.9		9.5	21.1	30.2		9.5	51.0	59.6		9.5	31.6	59.5		9.5	49.9	44.9	αB
9.3	42.6	34.6		9.3	28.3	53.9		9.5	15 6.3	6.1		9.4	47.6	0.2		9.0	30 4.5	51.3	K
9.5	0 0.1	11.0		9.3	52.6	14.1		9.0	35.4	33.5	K	9.5	48.9	54.2		9.5	16.6	18.8	
9.2	7.4	4.8	αB	9.0	54.8	56.3		9.5	43.9	6.2	αB	8.8	52.7	30.5		9.1	21.0	25.7	K
9.3	9.0	1.8	αB	9.3	7 6.7	56.3		8.7	44.6	41.3	K	9.5	54.8	38.2		7.4	22.4	16.0	K
9.5	16.3	32.5		8.5	11.3	29.4	K	9.5	53.3	51.1		9.5	23 3.8	34.8		9.4	23.6	39.7	
9.3	20.3	44.3	R	9.5	21.8	56.3	αB	9.2	16 6.3	42.0		9.5	14.4	41.7		9.5	53.7	23.9	
8.8	28.7	8.3		9.5	25.6	0.8	αB	9.2	9.0	19.7		9.3	20.2	59.0		9.5	59.5	9.8	
* 9.5	45.7	49.1		9.2	27.0	29.1	αB	8.2	22.6	58.2	L	9.0	29.0	27.3		7.7	59.9	1.8	K
9.5	46.4	23.4		8.0	45.0	41.8	Kb	8.6	25.7	8.7	K	8.7	34.4	55.2		9.3	31 0.2	53.2	
8.7	54.1	14.2		9.4	49.8	4.9	αB	9.5	30.3	7.5		9.3	37.3	4.5		9.3	27.0	40.0	
9.5	1 13.1	4.6		9.2	56.1	8.9		9.5	41.3	30.3		9.5	38.1	43.3		8.8	32.5	23.8	K
7.5	17.0	32.3	L	9.3	8 0.3	54.1		9.5	41.9	35.3		9.5	59.2	9.3		9.5	35.0	45.7	
8.5	18.0	4.2		9.5	24.8	17.9		9.5	48.5	21.0		9.5	24 5.2	43.0		9.5	54.5	1.6	αB
9.5	45.2	58.6		9.5	29.7	45.5		9.5	17 12.3	54.8	αB	9.5	22.0	35.3		9.4	57.1	8.0	αB
9.5	49.6	10.3		9.5	40.5	51.7		*var*	23.8	10.1	K	9.3	29.3	21.9		9.2	32 3.1	24.4	K
9.4	2 0.8	4.3		9.5	40.6	41.3		9.1	25.6	42.3	α	9.5	34.7	0.7		9.5	13.5	44.0	
8.4	12.9	39.4		9.3	9 1.8	50.2		9.4	27.1	56.1	αB	9.5	45.0	35.2		9.5	16.3	22.5	
9.5	15.1	46.5		7.5	9.2	6.2	Lb	9.5	31.3	4.3		9.3	45.5	53.2		9.5	38.2	15.0	
9.4	18.3	17.6		8.5	14.1	0.0	L	9.5	44.4	47.0		5.0	25 3.7	26.3	L	9.5	44.7	38.3	
9.2	22.9	48.6		9.5	20.5	59.1		8.8	54.5	48.5		9.3	16.1	9.6		9.0	48.6	17.9	B
9.5	27.2	4.5		9.5	23.7	49.8		9.5	55.1	53.3		9.5	22.4	58.6		9.5	52.6	16.0	
9.5	31.7	48.2		9.5	27.8	22.7		9.0	56.8	51.3		9.0	33.2	16.4	B	9.5	33 23.8	23.0	
	+	+			+	−			+	−			+	−			+	−	
10pr.	*32.48*	*0.02*		*10pr.*	*32.48*	*0.08*		*10pr.*	*32.47*	*0.19*		*10pr.*	*32.47*	*0.32*		*10pr.*	*32.46*	*0.42*	

1145ᵃ				*1170ᵃ*			
9.5	*0 44.4*	*19.4*		*9.5*	*3 48.0*	*0.0*	*B*

−7°

+7°

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ		+7°			6ᵐ		+7°			6ᵐ		+7°			6ᵐ−7ᵐ		+7°			7ᵐ		+7°	
m		′	″	′	m		′	″	′	m		′	″	′	m		′	″	′	m		′	″	′	
9.5	33	24.5		48.1	9.0	41	4.3		15.5	9.5	47	44.5		45.7	9.5	56	24.4		55.4	8.9	5	51.1		29.4	
9.5		25.0		55.7	9.5		12.7		55.5	9.4	48	13.2		25.5	9.5		32.1		31.7	9.3		52.7		6.4	
9.5		36.1		32.8	9.3		26.3		27.7	9.5		14.3		36.6	9.5	57	2.6		38.4	8.3	6	8.8		21.6	
9.1		38.7		38.9	*a* 9.5		32.2		45.0	9.5		38.4		51.7	9.2		15.7		32.8	8.5		11.4		16.2	
9.1		48.4		58.1	*a* 8.5		36.5		16.3	9.5		58.6		40.8	9.4		22.3		25.4	*a* 9.0		13.3		7.0	
9.5		54.9		12.1	9.5		45.1		11.5	9.5	49	9.5		0.3	9.5		22.3		4.6	8.0		24.3		27.9	L
8.4	34	12.0		36.8	L 8.4		53.8		59.7	9.5		22.6		17.3	8.8		26.3		25.1	K 9.5		27.6		16.0	
9.2		12.7		35.8	*a* 9.0		57.6		48.0	B 9.5		24.3		19.7	8.8		28.3		25.1	K 9.1		42.9		59.3	*ab*
7.3		26.8		31.8	L 9.1	42	1.0		6.0	*a* 9.5		42.6		49.0	9.4		30.3		46.8			52.5		1.3	
9.5		29.9		7.0	9.5		3.0		58.2	9.2		49.7		45.4	9.5		38.8		40.5	8.2	7	2.5		27.9	L
9.5		39.0		10.4	9.3		18.9		27.7	9.3		53.0		58.5	*a*K 9.5		39.3		49.6	9.4		15.7		2.7	
9.4		49.5		9.8	*a*B 9.5		19.8		45.3	9.0		55.8		43.6	8.9		55.6		54.7	9.5		16.8		52.8	
9.5		57.8		34.7	9.3		31.6		27.8	9.3		58.9		46.1	9.5	58	29.3		13.2	8.9		40.6		13.2	
9.5	35	3.5		51.3	9.4		39.2		23.8	9.3	50	5.1		20.4	9.3		32.4		32.7	9.0		46.0		35.5	
9.5		3.5		48.4	7.8		42.3		21.2	*B* 9.4		20.0		12.1	9.5		32.5		38.7	8.9		55.1		50.7	K
9.5		14.2		17.0	9.1		42.9		59.0	K 9.5		21.2		39.9	9.0		33.6		50.8	K 9.5	8	0.5		17.9	
9.3		15.0		53.8	9.1		47.3		59.1	K 8.8		35.5		37.4	9.5		37.3		16.4	9.5		2.6		58.3	
9.2		21.8		38.7	9.5		55.2		33.3	8.6		38.7		58.0	K 9.4		50.4		18.8	9.5		6.4		40.7	
8.6		26.4		55.7	K 9.4		56.7		53.3	7.0		48.6		49.2	K 9.5		54.9		41 9	9.3		9.5		28.7	
8.5		33.9		55.5	K 9.2	43	13.3		5.2	9.5		49.5		41.1	8.6		56.0		51.1	K 9.5		32.3		7.3	
9.4		35.8		33.8	9.3		18.9		31.0	9.5	51	3.9		11.9	9.4	59	4.4		29.4						
9.4		39.0		31.4	9.2		19.1		34.8	9.1		10.0		7.5	*ab* 9.3		6.8		29.3	9.5		35.3		10.3	
9.5		45.4		20.2	9.5		20.4		23.0	9.2		16.2		23.2	9.1		26.0		48.9	K 9.4		59.0		24.0	
9.5		45.7		23.0	8.8		22.2		48.7	K 7.0		30.8		30.6	K 9.5		32.2		58.1	9.0	9	4.3		22.4	B
8.4	36	6.0		37.5	K 8.7		33.6		56.0	K 9.3		45.0		5.4	8.8		41.0		12.8	9.3		4.8		38.1	
9.3		6.9		59.0	9.5		35.9		38.7	9.5		51.7		32.9	9.2		50.1		4.0	9.5		19.1		30.2	
9.5		14.8		24.4	9.5		54.0		15.9	8.7		59.7		27.0	K 5.9		59.3		41.7	K 9.4		23.7		26.6	
8.9		26.0		34.0	9.5		54.5		7.1	9.5	52	16.4		40.4	9.5	0	8.5		11.1	9.4		38.3		10.6	
9.5		38.7		47.7	9.4	44	18.0		40.7	9.5		20.3		10.8	9.5		18.1		15.3	8.9		40.0		45.4	
9.5		54.9		14.1	9.0		23.6		2.0	9.5		47.9		47.1	8.7		26.3		20.0	K 9.0	10	0.1		3.7	
9.5		55.0		3.2	9.2		31.7		43.8	*a*B 9.0		53.7		42.1	9.5		46.7		23.1	9.5		5.0		36.4	
9.5		57.1		51.0	9.3		36.6		21.6	9.4		56.2		18.8	*a*B 9.4		47.4		6.2	9.4		34.4		28.7	
8.5	37	3.4		36.3	K 8.1		47.7		59.7	L 9.3	53	11.4		42.6	*a* 8.7		58.2		9.3	K 9.5		46.5		6.5	
8.5		21.0		29.5	K 9.5	45	7.6		30.8	9.1		18.6		36.1	*ab* 9.5	1	21.6		28.3	9.5		52.2		13.5	
9.2		25.5		19.4	9.5		15.8		7.7	9.2		19.0		17.1	9.5		22.7		54.9	*a*B 9.3		53.9		4.6	
9.5		29.8		50.7	9.1		29.9		51.1	*a* 9.5		38.2		45.7	8.0		49.3		5.1	K 9.5		59.3		12.9	
9.5		53.8		18.9	*a*B 9.5		38.4		27.9	9.5		44.9		54.5	9.5		49.8		18.0	9.0	11	18.0		32.0	
9.5	38	2.2		16.6	9.5		43.7		57.5	8.3		47.0		7.9	7.0	2	6.8		57.3	B 9.0		19.5		38.8	
9.5		3.6		11.1	9.5		49.4		45.0	9.1		50.0		27.6	*a* 9.0		17.2		18.8	9.5		20.7		43.6	
9.5		9.5		43.8	9.5		54.1		57.2	9.5		57.0		38.6	8.6		19.1		33.7	K 9.0		33.0		24.3	K
9.0		11.2		33.4	*B* 9.5	46	7.6		16.5	9.5	54	8.3		31.1	9.3		25.5		11.8	9.4		42.4		2.4	B
9.3		16.6		41.3	9.3		14.3		28.2	B 9.3		17.3		30.4	*a* 9.3		34.8		45.4	9.5		45.8		6.6	
9.2		23.3		59.5	9.5		27.5		48.5	9.5		27.7		29.8	9.2		39.8		39.7	*a*B 9.5		56.0		8.2	
9.5		27.6		28.6	8.6		46.7		53.2	9.3		33.5		15.4	9.2	3	2.5		40.2	*a*B 7.5		59.9		24.1	K
9.3		31.7		55.9	8.7		54.4		12.7	8.7		34.0		14.3	L 9.2		7.4		21.5	9.0	12	13.0		38 1	K
9.5	39	7.8		12.9	9.3		58.5		48.0	9.5		43.5		28.0	9.3		17.0		50.9	9.2		14.5		41.6	*a*
9.3		10.5		15.2	9.1		59.3		22.6	*a* 9.5		47.3		45.6	9.5		18.7		24.5	9.1		40.5		6.8	*b*
9.3		27.4		18.3	8.5	47	5.3		40.2	B 9.3		55.5		42.7	9.1		18.8		41.0	*a* 9.4		49.5		53.7	
9.5		34.3		5.7	8.5		7.3		35.2	B 9.5		59.5		58.4	9.5		33.3		13.1	9.5		53.2		2.6	
9.2		46.6		15.8	*b* 9.5		7.5		43.5	9.5	55	6.2		38.3	9.5		46.0		26.0	9.5	13	4.6		22.0	
9.1		55.4		52.5	*a* 9.3		7.8		39.4	*a* 9.5		17.3		0.5	9.0		57.7		36.8	9.5		5.5		45.0	
9.3		55.6		30.1	*a* 9.4		14 0		58.9	8.7		29.0		4.3	L 9.5	4	27.5		13.5	9.5		22.9		54.6	
9.0		56.1		28.7	8.0		18.1		27.2	*B* 9.5		47.5		59.3	8.9		31.4		43.8	9.5		45.5		45.0	
9.3	40	21.5		7.9	8.9		26.0		1.7	K 9.0		55.3		19.7	8.9		32.0		51.6	9.3		58.8		24.9	
9.5		24.6		5.1	9.3		27.9		24.7	*a* 8.7		56.1		47.7	9.3		47.4		6.8	8.9	14	11.6		38.8	
9.3		39.0		10.4	9.5		31.6		29.1	9.4	56	2.5		54.6	9.5		50.3		53.8	9.1		13.5		45.5	*a*B
8.5		49.2		47.8	9.4		35.0		4.7	9.3		4.4		36.2	*a*B 9.3		56.6		52.8	*a* 9.0		16.7		8.7	B
8.8		57.8		52.6	9.2		39.0		23.2	9.5		11.8		30.4	9.5	5	23.4		33.7	9.2		18.3		57.1	*b*
9.0		59.4		46.0	9.2		40.3		55.6	9.5		23.5		39.4	*a*B 9.4		38.0		34.0	9.4		23.9		19.4	
9.5	41	2.9		28.0	8.5		42.8		37.1	B 9.5		24.0		41.4	*a*B 9.3		49.3		0.0	9.2		36.6		18.6	B
10pr.		+		−	*10pr.*		+		−	*10pr.*		+		−	*10pr.*		+		−	*10pr.*		+		−	
		32.45		*0.54*			*32.44*		*0.65*			*32.43*		*0.77*			*32.42*		*0.88*			*32.39*		*1.01*	

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	7ⁿ	+7°			7ⁿ	+7°			7ⁿ	+7°			7ⁿ–8ⁿ	+7°			8ⁿ	+7°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.8	14 43.5	30.3		9.3	25 48.0	52.1	αB	9.3	35 27.0	9.5		8.8	50 38.9	22.0		8.8	6 12.6	17.1	B
8.8	46.5	37.5		9.3	50.1	21.0		9.0	34.0	35.3		9.4	42.0	26.3	αB	9.3	14.0	7.9	αB
9.0	53.0	13.1		9.5	50.5	43.8	α	9.0	55.7	15.1		9.5	44.9	4.0	αB	9.3	23.6	23.3	
9.5	55.6	56.0	α	8.5	54.7	44.1	Kb	9.5	36 4.3	33.3		9.5	46.6	48.3	αB	9.5	35.5	32.0	
8.5	58.1	46.1	B	8.7	26 18.5	53.3	K	9.5	13.9	13.4		9.0	49.0	57.2		9.3	54.2	36.7	8
8.6	15 0.6	46.2	B	9.5	29.6	12.1		9.0	22.7	15.8		9.5	49.7	46.3		9.5	57.0	24.0	αB
9.5	15.2	4.4		9.5	35.7	20.4		9.2	46.9	57.1		9.5	57.1	50.3		9.0	7 5.2	15.9	K
8.8	17.0	48.2	K	9.4	35.9	5.2		8.8	58.6	58.0		9.2	58.4	29.2	αB	8.8	21.3	30.0	K
8.5	18.0	14.5		9.4	42.4	4.3	α	9.5	37 8.3	16.8		9.4	51 3.8	51.2	αB	9.5	8 40.4	29.9	αB
9.5	32.5	34.0		9.4	52.9	59.1		9.3	25.8	49.1	α	9.4	11.0	0.2		8.0	55.4	50.1	K
8.5	16 2.9	13.1	Kb	9.3	27 0.1	3.8	αB	8.5	38.5	45.4	K	8.8	24.9	37.1	K	7.8	58.7	48.8	K
8.5	30.1	34.2	K	8.5	12.2	10.1	K	9.5	38 9.6	44.3		9.5	36.6	18.6		9.0	9 14.5	30.7	
9.0	35.6	26.2		7.3	36.4	52.3	Kb	9.5	39 8.7	48.5		9.3	52 47.7	34.3		9.5	20.0	8.5	
9.0	17 11.0	54.1		9.5	58.0	31.7		8.7	24.0	26.4	L	9.2	53 2.2	24.3	αBb	8.8	10 14.2	43.6	K
9.2	19.5	11.5		9.5	58.8	41.7		9.5	34.1	5.9		9.5	15.3	3.6		8.9	44.2	50.8	K
9.5	30.5	11.5		9.5	28 20.3	9.6		9.0	44.1	24.0		9.3	37.1	48.5		9.0	11 1.4	29.5	K
8.8	38.9	51.7		8.8	29.7	51.4		7.8	40 2.0	41.9	K	9.0	44.5	18.4		9.5	3.5	58.8	
9.5	41.1	43.2	αB	9.2	30.0	45.0		8.3	37.9	7.3	K	9.5	54 48.0	15.4	αB	8.8	25.8	14.4	K
8.5	48.6	50.7	L	9.5	40.9	31.0		9.3	38.0	10.0	α	9.3	59.3	8.6	αB	9.4	12 11.9	56.2	αB
9.0	18 2.9	26.0		8.0	43.4	39.0	K	9.5	41 29.3	41.2	α	9.5	55 0.0	43.5		9.3	49.0	6.2	
9.1	10.7	54.9	α	9.1	53.9	45.8	K	8.5	42 16.2	38.6		9.5	21.1	6.1		9.0	13 5.1	16.1	L
9.2	31.0	51.2		8.8	58.4	18.0		8.8	31.4	5.4		9.3	23.9	2.1		9.3	12.9	48.2	
9.0	31.1	34.0		9.5	29 5.3	51.5		8.8	52.9	12.0		9.5	27.7	10.5	αB	9.0	27.0	26.4	
9.5	19 6.6	14.1		9.5	11.4	38.6		7.5	43 13.4	48.1	K	8.3	34.6	31.9	Kb	9.3	35.5	37.5	
8.3	21.8	37.7		9.4	14.4	39.8	αB	9.5	19.8	48.5	α	9.5	37.9	20.7		8.8	37.4	51.8	K
8.9	39.7	5.9		9.2	36.2	56.1		8.8	38.9	42.6		9.3	56 18.7	19.5		9.5	14 5.0	6.5	
9.3	45.2	57.4		9.5	36.6	21.6		9.0	44 5.3	23.0		9.5	27.7	58.2	αB	9.5	5.2	23.7	
8.8	20 2.1	32.4		9.5	45.0	35.3		8.5	5.6	27.3	K	8.5	42.8	0.4		8.5	49.3	10.8	K
6.0	16.3	13.8	K	9.3	47.5	21.7		9.0	9.0	13.1	B	9.4	55.0	10.9		9.5	51.6	29.0	
9.2	35.3	43.9	K	9.5	30 13.4	20.7		9.3	20.0	7.3	α	8.3	57 0.2	43.5		8.5	57.4	57.8	K
9.5	37.6	23.0		9.0	15.1	12.1	K	9.0	23.4	31.3		9.4	29.1	58.5	αB	8.5	15 45.3	16.1	L
9.5	40.1	19.4		9.2	51.7	7.8	αB	9.3	45.1	29.8		8.7	30.8	48.3	B	9.5	56.5	21.7	
9.4	45.5	36.0		9.0	54.9	50.9	B	9.0	45 6.5	34.0		9.5	58.3	43.2	B	8.8	16 15.6	54.1	K
9.5	49.3	24.0		9.3	31 8.3	13.5	αB	8.3	13.3	5.0	K	8.9	58 21.5	2.9		9.2	18 4.8	19.1	Kb
9.5	50.4	43.0		9.3	14.0	18.1		9.2	18.1	25.0		9.5	23.8	21.4		7.5	19 15.0	41.5	K
9.5	50.7	51.6		9.5	22.5	46.2		8.8	18.2	50.7		9.0	29.2	31.1		9.2	18.6	54.9	
9.5	51.3	18.4		8.8	35.4	36.4		9.4	26.5	1.5		9.2	48.0	52.9		9.3	45.7	30.8	α
9.0	21 10.2	47.9		8.7	53.4	46.8	K	9.5	39.0	57.5		9.0	59.1	30.6		9.2	47.6	58.7	
9.0	15.5	25.0		8.5	32 27.9	6.2	K	9.5	46 1.3	28.3		9.1	59 20.6	48.5	α	8.7	20 24.2	28.4	K
9.5	20.7	35.1	αB	9.2	48.6	31.5	αB	9.3	48.0	12.0		8.8	21.2	7.1	K	8.5	26.1	37.6	K
9.0	21.4	37.6		8.9	52.1	25.8		8.8	56.9	33.4	Kb	7.8	30.9	41.5	Kb	9.0	33.6	15.8	
9.5	32.1	34.0		8.5	55.0	21.7		8.4	47 4.1	17.8	K	9.3	42.0	54.3		8.2	35.1	10.7	B
9.5	46.7	59.9		9.5	33 5.3	21.4		8.2	20.8	22.6	K	9.2	0 18.5	38.2		8.0	47.6	28.0	K
9.5	53.0	27.0		9.0	13.9	21.0		8.5	25.3	32.4	K	9.5	1 3.3	26.3		8.8	21 18.6	23.4	K
9.5	22 12.1	21.0		9.1	24.8	45.5	αB	9.4	37.5	23.2		9.5	2 16.5	22.1		9.5	22 11.1	18.3	
8.5	41.7	0.8		9.1	29.8	41.2	αv	8.9	37.5	56.5		9.3	16.8	46.1		9.5	56.6	11.0	
9.3	49.6	46.9		9.4	51.0	21.7		9.5	39.5	18.9		9.5	31.3	54.8		9.5	23 17.7	11.7	
9.3	50.7	57.5		9.5	54.1	0.3		9.0	48 12.1	58.2		9.5	36.9	41.2		8.7	27.2	30.4	Kb
9.0	55.1	13.5		9.5	56.5	46.5		9.4	31.5	59.7		9.3	40.8	27.5	αB	9.5	25 45.9	39.5	
9.0	23 2.8	1.4		9.0	34 3.2	26.4		9.5	40.4	40.3		8.8	3 10.9	24.3	K	9.5	49.1	46.3	
9.0	30.5	3.7		9.2	9.4	16.4	αB	9.4	48.5	0.9		9.5	16.8	24.6		9.5	50.5	20.8	
9.0	33.6	43.9		9.3	10.1	51.9		9.4	49.9	26.4		9.0	45.7	38.6		9.5	26 1.9	27.4	
9.4	34.4	56.8		9.3	23.1	6.8		8.3	56.8	44.4	Kb	9.1	47.6	26.6	αB	9.0	25.4	24.5	K
9.3	24 9.0	9.0		9.0	23.8	28.3		8.5	57.6	19.0		9.0	56.3	21.1		9.5	28.1	57.7	
9.3	13.1	20.0		9.3	38.5	19.1		9.2	49 19.5	3.4		8.7	56.7	59.6	K	9.5	38.6	8.9	
8.3	59.2	26.3	K	9.0	43.1	47.8	K	7.5	39.5	13.4	K	9.5	4 23.0	4.8		9.3	40.8	41.5	b
9.3	25 2.8	19.2		8.5	57.2	32.3	K	9.2	42.4	34.4	αB	9.4	23.9	58.4	αB	6.0	28 8.5	7.3	Kb
8.8	19.3	44.8		8.5	35 1.5	25.0	K	9.3	50 5.5	20.1		9.0	48.2	24.6	K	9.5	29.8	14.5	αB
9.0	42.6	32.4		9.3	3.9	33.6	α	6.8	18.3	35.5	Kb	9.0	52.2	44.5		9.5	34.9	52.5	αB
8.8	47.7	26.9		8.9	12.0	28.0		9.5	29.2	18.4		8.8	5 48.7	24.0		9.5	36.6	20.0	
	+	—			+	—			+	—			+	—			+	—	
10pr.	32.37	1.15		10pr.	32.34	1.28		10pr.	32.30	1.47		10pr.	32.25	1.63		10pr.	32.18	1.86	

2001—2060

	8ʰ		+7°	
m	′	″	′	
9.0	28	58.1	52.2	B
8.5	29	27.5	56.3	K
8.7		34.2	14.5	L
8.5		45.2	14.5	L
9.5	30	43.1	59.8	
9.5		50.2	21.5	
9.5		50.8	32.5	
8.3	31	16.2	29.2	K
9.0		29.5	31.8	K
9.5		43.1	45.3	
8.0	32	30.6	4.1	Kb
9.5		32.0	41.3	a
8.5		37.2	13.1	K
8.7		43.3	39.7	L
9.3		54.8	11.3	K
9.0	33	41.3	21.1	K
9.3		42.4	39.1	a
9.5	34	16.1	47.8	
9.5		16.5	27.7	
9.5		55.2	24.6	
9.3	35	8.6	51.9	Kb
9.5		15.5	47.0	
9.5	36	8.0	57.2	
9.3	37	47.5	26.8	aBb
9.4	38	16.1	6.6	
9.5	39	3.5	36.3	
9.3		5.3	23.2	
9.0		17.8	40.5	
8.7	40	15.8	12.4	L
9.5		21.6	0.6	
9.5		38.8	2.0	
9.0		45.4	38.4	
9.5		47.1	49.2	
8.2		58.7	6.9	L
9.3	41	34.8	9.6	
7.5	42	5.5	33.2	K
7.7		14.8	4.8	K
9.5		26.9	20.0	
9.0	43	5.1	23.5	
9.5		15.9	55.7	aB
9.5		43.0	32.5	
9.5	44	9.8	41.1	
8.7		30.8	27.7	Lb
9.5		38.6	39.8	
9.5	45	9.5	14.5	
8.5	47	55.8	31.8	K
9.5	48	1.6	7.1	
9.0		50.1	34.6	
8.5		50.2	12.1	K
9.1		50.7	58.0	ab
9.5	50	9.5	44.9	
9.2		16.6	41.0	b
9.5	51	25.6	23.2	
9.2		34.2	22.3	b
8.4		37.1	58.8	K
9.5		46.2	3.7	
9.5		59.5	40.4	
9.0	52	11.5	42.1	
9.5	53	5.5	48.8	
9.2		14.2	13.6	
10pr.		32.07	2.16	

2061—2120

	8ʰ—9ʰ		+7°	
m	′	″	′	
9.5	53	28.0	34.2	
8.3	54	4.3	3.9	Kb
9.2		46.0	1.6	a
9.5		50.1	13.0	aB
9.3		58.1	13.2	aB
6.5	55	1.5	52.8	K
9.5		13.7	49.5	
7.0		32.2	24.6	K
9.2	56	6.5	52.2	a
9.2		29.1	17.6	aB
9.5		42.2	49.1	
8.8		46.8	0.9	
9.0		48.5	53.7	B
9.0	57	42.7	24.7	Kb
9.5	58	17.5	58.8	
9.0		19.7	46.0	K
9.5		26.2	14.7	
8.0	59	43.2	24.8	B
9.5		49.2	27.0	
9.5	1	29.7	20.9	B
9.1		39.5	59.3	K
9.5	3	25.7	38 0	B
9.5		46.2	17.5	
9.5		50.0	49.0	
9.4	4	12.2	22.7	
9.1		53.3	31.8	ab
9.5	5	8.3	40.8	
9.5		28.0	46.0	
9.4		35.6	58.9	
9.5	6	3.7	44.9	
9.5		35.9	38.7	
9.1		50.6	35.6	b
9.3	7	24.0	22.0	
9.3		41.0	54.2	K
9.5		51.0	16.1	
9.5		54.6	33.5	
9.3		59.6	29.0	
9.5	8	10.1	33.1	
8.3		15.9	7.5	K
9.5		48.0	42.9	
8.8	9	27.2	52.9	
8.6		28.8	50.5	
9.3		33.3	22.7	K
9.5		39.2	4.3	
9.0		50.0	50.8	
9.5	10	14.0	41.1	
9.5		30.1	54.7	
8.7		40.0	40.8	Kb
9.5	11	58.3	56.4	
9.5	12	9.5	23.5	
9.5		51.6	43.9	a
9.5	13	2.4	3.3	
9.5		19.8	50.1	
9.0		48.0	26.6	
9.5	14	2.9	53.0	
8.5		28.1	17.8	
9.4		47.8	8.5	
9.0		48.6	28.3	
*9.5		54.5	2.0	aB
*9.3		56.0	42.5	
10pr.		31.93	2.42	
2119ʰ				
9.5	14	55.2	13.4	

2121—2180

	9ʰ		+7°	
m	′	″	′	
9.5	15	41.3	41.1	
9.3		57.6	13.0	
9.5	16	8.0	49.8	
9.5		15.9	4.7	
9.5	17	33.3	48.1	
9.5		47.0	15.7	
8.0	18	56.3	8.8	L
9.5	19	7.2	36.9	ab
9.2		18.7	47.1	K
8.3	20	2.2	58.9	R
9.5		14.1	7.6	
9.0		36.3	8.2	K
9.5		41.6	37.6	
9.5	21	14.0	46.0	
9.5		17.3	18.9	
9.3		22.3	28.5	
9.0		47.0	51.5	K
9.5	22	3.0	20.7	
9.5		6.1	42.9	
9.3	23	12.9	11.5	
9.3		20.7	4.8	
9.5		31.6	34.9	
9.5	24	1.6	36.2	
9.2		10.4	55.9	K
9.3		18.2	2.3	
9.2		34.6	59.8	K
7.5		52.9	42.3	L
9.5	25	30.1	37.0	
9.4		31.3	23.0	
9.5		58.0	5.0	
9.0	26	21.7	8.6	
9.3		36.3	46.0	a
9.5		45.6	14.8	
9.5		52.7	54.7	
9.2	27	2.3	47.1	K
9.5		39.6	47.4	
9 1		47.7	24.4	ab
9 5	28	11.3	4.7	
8 1		54.7	45.7	K
5.8	29	34.3	28.6	K
9.5		39.4	39.7	
9.5	30	50.4	39.4	
8.3		50.4	5.4	K
9.5	31	6.0	34.3	
8.9		48.0	8.5	Kb
9.5	32	24.9	7.8	
9.5	34	2.6	40.1	
8.7		24.3	23.4	L
9.5		52.3	50.8	a
9.5	35	19.3	33.5	
9.5		43.0	7.8	
9.5	36	10.5	7.6	
9.5		31.0	9.9	
9.5		40.3	22.4	
9.2	37	4.6	49.4	K
9.5		26.7	9.0	
9.5		31.3	43.2	
9.5	38	4.1	59.1	
9.5		6.6	51.9	
9.5		25.0	59.1	aB
10pr.		31.81	2.62	

2181—2240

	9ʰ—10ʰ		+7°	
m	′	″	′	
5.8	38	31.3	22.0	K
8.1	39	22.6	45.0	K
8.8		59.7	29.0	K
9.5	40	35.6	18.2	
9.5		36.6	48.8	
9.5		41.1	5.1	
9.5		50.2	50.3	
9.5	41	16.3	25.1	
9.5		25.3	48.4	
9.5		32.6	25.1	
9.2		47.9	13.9	aB
9.5		57.8	44.1	
9.0	42	1.3	37.7	
9.5	43	31.3	23.4	
9.3	44	16.7	9.0	
9.0		29.9	8.4	K
9.5		32.3	2.1	
9.3		49.6	35.3	
9.5	45	17.3	39.1	
9.2		41.0	13.7	Kb
9.3	46	13.0	48.1	
9.5		20.3	54.7	
8.5		21.7	37.7	K
9.5		51.0	30.4	
9.0		59.6	45.7	K
8.3	47	14.6	51.0	Kb
9.3		43.6	29.7	
9.5	48	7.0	45.0	
8.7	49	26.6	1.5	K
9.4		37.5	38.3	b
9.5		54 3	49.4	
9.5	50	24.3	39.0	
9.5	51	10.4	22.8	
9.5		24.0	13.7	
9.5	52	0.0	13.4	
9.5		1.5	34.6	
9.5		13.3	29.0	
9.5		21.4	4.9	
8.8	53	38.0	54.8	K
9.0	54	4.3	46.3	K
9.2		44.3	59.0	
9.5		50.8	20.2	
9.3		55.7	35.5	
9.3		57.2	42.0	
9.5	55	1.3	5.4	
9.5		1.5	28.5	
8.5		18.2	48.3	L
9.5		36.8	4.0	
9.5		55.5	13.6	
9.5		57.6	4.9	
9.5	56	8.5	17.4	B
8.7		20.0	52.8	K
9.3	57	25.3	53.0	
9.5	58	43.7	57.6	
8.7		59.7	36.5	K
9.1	59	15.2	6.9	ab
9.5		16.8	16.4	
9.1	0	0.5	4.3	K
9.5		5.0	27.1	
9.5		10.7	57.5	
10pr.		31.67	2.81	

2241—2300

	10ʰ		+7°	
m	′	″	′	
9.5	0	16.7	54.9	
9.5		23.9	26.8	
9.0		24.8	30.3	
9.5		52.8	42.7	
8.8	1	10.8	25.4	K
9.5		41.5	39.0	
9.5		45.5	16.1	
9.5		51.8	44.9	
9.5		56.5	22.6	
9.5	2	32.3	44.6	
9.5		57.3	14.6	
9.5		58.4	10.9	
9.2	3	17.7	7.4	
9.5		27.3	13.9	
9.3		39.2	2.5	
9.4		50.2	13.3	
9.3		59.1	53.5	b
9.5	4	43.2	41.7	
8.5		49.3	22.9	K
9.1		53.3	4.7	a
9.5	5	34.8	35.7	
9.5	6	57.0	41.1	aB
9.5	7	1.0	19.8	a
9.5		4.0	52.6	
9.5		29.5	27.4	
8.8	8	6.3	37.9	K
9.0		35.8	51.4	K
9.5	9	33.5	52.7	
9.4		37.6	19.3	aB
9.5		42.6	16.5	
9.3	10	2.5	27.1	
8.5		9.1	8.0	R
8.8		33.5	20.9	
8.5	11	0.2	59.9	K
8.4		10.0	23.4	L
9.2		15.0	21.6	a
9.5		52.4	55.8	?
9.0		52.5	17.8	K
9.5	12	12.3	55.9	
9.1		40.2	59.9	ab
9.5		56.0	29.4	
8.0		58.4	8.8	K
9.0	14	10.0	21.2	Kb
9.5		13.5	50.4	
9.5		20.2	14.2	aB
9.5		25.0	14.2	aB
9.5	15	5.0	41.7	
9.5		18.7	59.0	
6.5		26.5	16.6	K
9.3		42.9	32.2	aB
9.3		50.0	41.0	b
9.5		55.0	31.5	
9.3	16	5.5	8.1	
9.4		18.2	1.4	
9.5		48.5	40 0	
9.5		53.5	29.2	B
9.5	17	2.0	50.5	
9.5		13.5	52.7	
9.5		26.4	7.8	
*9.5		53.5	7.7	
10pr.		31.53	2.96	
2300ʰ				
9.6	18	0.0	3.5	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	10ᵐ		+7°			10ᵐ—11ᵐ		+7°			11ᵐ		+7°			11ᵐ—12ᵐ		+7°			12ᵐ		+7°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.5	18	20.5	35.8	Kb	9.5	40	29.0	29.9		9.0	2	40.4	5.5		9.5	38	57.0	0.1		8.3	17	28.7	10.7	K
9.5		27.7	57.6		9.5		33.0	16.0		9.5		49.5	51.4		9.0	41	12.4	41.1	K	9.5	19	5.4	43.7	B
8.8		52.8	9.7	K	9.0		38.5	32.6		9.3	3	12.9	19.4	αB	8.5	42	18.0	39.4	K	9.5		46.6	1.5	
9.5	19	3.0	52.5		9.5		42.0	39.7		9.3	4	19.7	26.1		8.1		18.9	20.0	K	8.6		59.0	56.0	K
9.5		26.0	15.3		*8.5		52.0	46.3		9.4	5	21.4	28.5	αB	9.5	43	5.5	8.4		9.2	20	2.9	36.9	b
8.5		51.2	57.2	K	9.2		59.1	2.7		9.5	6	18.0	51.0		9.2		5.9	1.6		9.2		13.2	19.4	B
8.3	20	31.9	0.1	Lb	8.5	41	7.5	44.8	K	9.4	7	10.9	40.7		8.2		21.9	8.8	L	8.6		47.0	53.2	K
8.8		35.0	27.8	K	8.5		50.0	30.7	Kb	9.4		39.2	21.4	αB	9.2		29.5	7.0	α	9.5	21	26.7	2.0	
9.5	21	57.5	4.5		9.5	42	8.0	10.2		9.1		43.0	49.3	αb	8.2	44	8.5	40.8	K	8.2		42.4	39.8	K
9.5	22	2.9	51.6		9.5		25.5	16.7		9.5	8	32.1	58.7		9.0		12.1	47.5	K	9.3		58.4	8.3	K
9.5		6.5	29.3		9.0	43	6.7	45.0	B	9.5		52.5	10.4		9.5	45	16.9	49.6		9.2	22	10.5	2.9	Kb
9.5		9.0	27.1		9.1		11.1	44.2	α	9.5	9	21.0	58.8		9.5	46	54.5	0.3	B	8.7	23	16.8	55.5	
9.5		26.8	8.7		9.3		17.0	12.2		9.2		40.0	27.2	Kb	9.2	47	4.1	18.4	Bb	9.5	24	46.4	2.8	αB
7.5		54.5	47.7	K	8.5		17.0	37.5	K	9.5	10	6.5	47.2	αB	9.4		34.0	7.7	α	9.4	26	8.3	3.7	
8.3	23	3.0	22.0	R	8.3		37.0	30.9	K	9.3	11	3.4	29.2		9.0	48	16.4	40.3	L	8.3		58.9	11.6	L
9.5		24.0	34.8		9.5		58.5	52.4		9.0	12	7.5	39.7	K	9.0	49	10.9	4.7		9.5	28	23.9	35.4	
9.3		31.4	21.6	αB	9.0	44	4.5	20.6		9.2		13.1	4.6	α	9.2	50	17.8	59.9	K	9.5	29	47.7	22.5	
9.5		47.9	20.6	α	8.7		30.5	48.8	Kb	9.3	13	8.6	33.9		8.9		19.1	5 7	K	9.1		57.6	39.1	Kb
8.9	24	18.9	41.4	B	8.6	45	18.0	58.7	K	8.1		31.8	52.1	K	8.0		20.2	47.0	K	9.5	30	32.7	3.1	
9.5		27.0	27.8		9.5	46	51.7	19.4		7.5	14	0.7	25.4	K	8.7	52	2.0	41.6	K	9.5		34.6	58.1	
9.5		43.5	46.2		9.1		56.5	36.0	ab	9.2	15	19.8	20.0	K	8.7		59.8	18.9	K	var	31	9.0	47.7	B
9.5		48.0	16.4		9.4	47	27.0	52.7		9.3		30.6	6.3		4.5	53	27.2	24.8	K	9.3	32	19.7	52.2	b
8.9	25	45.1	6.7		9.5		36.0	6.3		7.5		46.1	22.8	Kb	8.5		36.8	44.2	K	9.3		20.4	14.5	
8.7		49.2	50.2	K	8.8	48	7.7	44.5	K	8.8		55.5	9.0	K	9.5		48.7	57.3		9.5		31.0	56.6	
9.2	26	14.0	27.9	K	9.5		12.0	20.1		9.5	16	51.8	8.5		8.4	54	1.7	18.4	K	9.5		53.7	10.3	
9.0		23.5	22.9	K	9.5	49	15.0	5.0		9.4	18	11.9	57.7		9.3		6.9	5.4	αB	9.4	33	58.6	1.5	
9.5		27.5	35.8		9.5		20.0	35.5		9.0		43.5	34.5		9.2	55	11.7	17.3	αB	9.4	34	29 5	50.0	
9.5		33.5	53.5		9.5		32.6	16.0		9.3	19	8.0	28.3	B	9.5		19.3	6.7		6.0		36.8	36.2	L
9.5		51.0	20.8		9.5		35.0	10.3		9.2	20	51.8	50.0	K	9.5		23.4	58.4		9.5	35	12.6	2.1	
6.3	27	15.2	41.4	K	9.5		35.0	59.2		9.3	21	3.3	35.4		9.1	56	43.3	59.7	K	9.0	36	3.7	14.7	
8.5	28	30.5	46.6	K	9.2	51	29.0	48.3	K	9.5		14.4	5.2		9.5	57	57.7	2.2		8.7	37	0.2	39.6	K
9.3		33.0	25.7		8.5		38.5	42.5	K	8.9		44.5	36.4	K	9.4	58	30.0	34.9		9.5		51.3	25.4	
9.0		44.0	13.3	K	9.5	52	51.0	34.1		9.4	22	37.2	47.6	αB	9.3		52.4	56.1		9.5	38	37.2	28.5	
9.5		52.0	48.7		9.5		55.0	3.5		9.3		58.4	38.2	K	9.5	59	45.4	54.1		8.8	39	51.0	23.7	
9.3	29	17.5	23.0		9.5		59.8	15.3		9.5	23	37.6	10 9	αB	9.5	0	6.7	43.4		8.5		54.2	48.5	Kb
9.5		46.0	30.0		9.3	53	1.7	49.7		9.3	25	32.7	27.3		8.8		17.1	34.6	K	8.7		58.8	38.8	K
9.5	30	3.5	36.1		9.5		20.6	23.7		9.3		33.4	42.4		9.2		36.0	8.7	Bb	8.7	41	22.8	42.8	K
9.5		38.0	37.3		9.5		39.4	3.5		9.4	26	20.8	58.5	αB	9.5	1	0.9	26.3		9.0		33.8	34.4	K
8.8		43.1	13.6	K	9.3	54	14.4	38.5	K	8.9	27	28.9	4.7	K	9.0		43.5	30.0		9.1		47.5	59.0	K
9.5	31	14.0	51.4		9.5		18.4	49.6		9.1		54.5	58.8	αR	8.8	3	42.7	29.3	Kb	8.0	43	0.7	1.1	K
9.5		52.5	30.3		9.5		43.0	1.4		8.7	28	5.6	19.8	K	9.2	4	24.4	34.5		9.2		35.6	2.6	
9.5	32	30.4	52.1		9.0	56	7.3	47.8		9.3		8.1	12.9		9.0		24.6	44.6		9.3	44	23.5	27.4	αBb
9.3		42.0	22.9	b	9.5		19.0	23.0		8.5		28.4	34.6	K	9.5	6	30.6	43.9	Bb	9.5	45	12.4	22.0	
9.3		50.3	0.6		9.2		34.8	4.2	b	9.5	29	16.8	18.7		9.5	7	27.2	46.3		9.5		42.2	25.8	B
8.8	34	4.5	47.7	K	9.4	57	6.1	56.8		7.5		50.4	3.5	K	9.3		49.5	48.3	B	9.0		52.4	21.8	
9.5		32.0	38.3		9.5		16.0	53.5		9.2	30	17.0	39.1	L	8.0	8	51.6	1.7	Kb	9.5	46	31.3	57.2	
9.5		54.0	37.5		9.5		30.0	6.2		9.4		18.6	29.7		9.3	9	36.6	2.7		9.5		34.8	53.0	
9.0		56.0	25.4		9.5		44.0	6.2		8.7	31	5.3	18.4	L	9.2		37.0	12.6		8.2		36.7	32.3	K
9.5	36	8.5	53.3		9.5		48.0	25.7		9.4		9.1	18.8		8.2	10	3.6	24.5	Kb	9.5	47	17.4	35.0	
9.5		36.8	28.2		9.5	58	21.5	35.0		9.5		30.8	9.3		9.2		10.6	11.7	B	9.1		48.5	24.9	α
9.2	37	3.1	6.0		8.7		34.7	49.0	K	9.3	34	28.8	36.9	K	9.4		31 1	52.3	αB	9.0		52.6	53.2	K
9.0		31.5	20.3		8.3		38.5	54.7	K	9.5		51.6	59.5	B	8.9	11	48.8	48.4	K	9.5	48	40.0	36.0	
9.5		37.0	37.5		8.2	59	22.1	28.6	K	8.6	35	25.7	11.5	K	9.0	12	1.8	2.7		9.5		40.9	8.4	
8.3		46.0	43.2	K	9.1		48.6	8.1	αB	9.5	36	9.2	21.8		8.5		2.9	46.4	K	8.7	49	3.6	40.8	
9.3	38	8.5	33.0		9.3		52.5	8.3	αB	9.1	37	3.6	38.7	α	8.5	13	31.6	23.5	K	9.5		14.8	1.5	
7.2		33.3	8.0	Kb	9.3	0	9.8	18 2	B	9.0		26.3	52.1	K	9.2		55.0	6.6		8.8		20.7	49.5	K
9.5	39	30.0	41.0		8.7		42.9	21.1	K	7.9		57.7	50.4	Kb	8.8	15	14.1	11.9		9.3		46.0	34.7	αB
7.8		47.4	5.9	K	9.3	1	28.3	42.0	b	8.2	38	22.9	44.9	K	9.5		42.1	40.1	K	9.5	50	13.4	16.4	
9.5		57.0	26.8		9.5		36.2	7.5		4.3		25.2	20.2	K	9.4	17	14.9	23.6	αB	9.3	51	17.8	53.3	
9.3	40	20.5	39.7		9.4		55.3	1.9	αB	7.5		39.9	58.9	K	9.4		21.0	26.1	αB	7.5	52	1.1	17.7	K
		+	−				+	−				+	−				+	−				+	−	
10pr.		31.40	3.07		10pr.		31.24	3.19		10pr.		31.02	3.29		10pr.		30.74	3.34		10pr.		30.43	3.30	

2365ᵐ				
9.7	40	54.1	51.9	B

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	12ᵘ—13ᵘ		+7°			13ᵘ		+7°			13ᵘ—14ᵘ		+7°			14ᵘ		+7°			14ᵘ—15ᵘ		+7°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9 5	53	18.4	19.9		9.5	25	13.9	4.8		9.5	50	5.1	41.8		8.8	18	42.8	7.6		8.0	39	35.8	53.8	K
8 4	54	17.2	48.2	K	9.5		50.3	8.2		9.2		50.7	16.2		9.5		44.7	37.4		9.5		57.3	14.1	
9.5	55	35.4	28.8		9.5	27	23.7	49.2		9.4	51	55.8	13.7		9.2		49.4	35.6		9.0	40	55.9	57.1	K*b*
8.6		39.3	47.0	L	8.7		41.1	11.6	K	9.5		56.1	38.4		8.5		50.6	53.6	L	9.5	41	3.4	27.3	
8.8		53.6	8.8		9.0		51.1	35.5	K	9.4	52	10.1	37.7		9.5	19	6.7	8.2		8.5		15.3	49.2	K
8.6		57.4	36.8		9.5		52.6	19.2		9.0	53	10.1	44.6	K	9.5		28.4	22.0		9.5	42	10.8	11.0	
9.5	56	33 0	59.9		8.8		57.8	14.4	K	9.5		16.8	3.3	*aB*	9.4	20	6.1	21.4		9.5		14.3	9.3	
9.2		38.4	51.5	K	9.3	28	17.6	54.4	K	9.3		16.9	6.4	*aB*	9.5		26.0	9.7		9.4		37.3	25.6	
9.2		40.3	43.1	K	9.0		20.7	48.1	K	9.1		17.5	55.4	*ab*	9.5		27.7	21.0		8.8		43.0	51.3	K
9.4	57	54.8	15.3		9.3		31.2	18.0		9.5	54	18.7	34.2	*aB*	9.0		43.7	36.3	K	9.1	43	17.3	25.6	K*b*
8.8	59	20.7	13.0		9.2		36.7	31.9		9.5		21.2	25.7	*aB*	9.2	21	14.8	23.8		9.5	44	33.8	43.6	
8.2		24.6	55.4	K	9.5		52.1	49.2		9.5		26.0	32.2	*aB*	9.5		32.0	34.5		9.5		37.6	7.0	
8.9	0	7.2	19.1	B	8.0	29	30.3	34.2	K	9.5		40.7	16.9		9.5		34.9	54.3		9.5		51.5	16.5	
9.3	1	22.2	53.8		9.2		34.1	21.7	*R*	9.5	55	14.1	30.7		9.2		41.4	56.1	K	9.5		56.9	6.7	
9.0		45.1	28.8	K	9.3	30	37.4	28.0		9.5		23.7	33.5		9.5		50.4	45.3		9.5	46	24.8	43.2	
9.5		53.3	40.4		9.4	31	46.1	37.4		9.5	56	1.7	24.0		9.5	22	48.4	16.6		9.5		31.5	36.3	
8.2	2	2.5	46.8	K	9.5	32	32.3	2.1		9.2		3.4	41.4	K	8.7	23	54.3	55.0	K	9.5		57.9	0.9	
9.5		22.6	57.9		9.0		51.7	35.2	K	9.5		16.1	46.7		8.9	24	37.7	20.3		9.5	47	7.3	7.2	
9.5		23.6	56.5		8.9	33	19.1	17.2		9.5	57	17.0	45.2		9.4	25	5.1	11.0		9.2		13.8	22.9	*R*
9.5		37.4	5.7		9.2		44.7	46.8	K	9.5		22.0	48.1		8.3		13.7	31.8	K*b*	9.0		15.8	42.9	K
8.9	3	48.0	23.7	K*b*	9.3	34	24.5	48.5		8.0		29.0	42.2	K	9.5		35.1	36.3		9.4		30.5	20.1	
9.2	4	12.0	25.8	K	9.0	35	34.4	13.0		9.5		41.0	46.4		9.4		41.8	8.8		9.5		37.8	29.4	
7.8		14.6	34.0	K	9.5		37.4	45.0		9.5		52.6	7.9		8.0		48.1	35.7	K	9.5		47.0	19.0	
9.5	5	1.9	24.5		9.5		56.7	8.5		9.2	58	35.9	54.5		9.5	26	18.9	18.2		9.5	48	4.9	59.6	
8.8		14.5	47.9	K	9.5	37	22.4	5.8		9.5		41.0	5.0		9.5		41.3	49.5		7.5		15.3	24.2	K*b*
9.5	6	37.2	5.0		9.5		57.1	44.4		7.5	59	12.4	41.5	K*b*	9.5	27	14.3	52.0		9.2		37.3	36.4	
7.0	9	6.4	16.0	K*b*	9.5		57.5	8.5	*aB*	9.5		53.7	14.8		9.1		43.6	55.5	K	9.5	49	19.5	55.0	
9.2		13.6	4.9	K	9.5	38	52.0	3.0		9.5		59.2	36.7		9.5		52.0	47.1		9.5	50	38.1	30.5	
9.4		14.4	33.9	*aB*	9.5	39	39.4	23.1		9.5	0	55.7	46.4		9.2	28	36.7	38.8	K	8.5	51	4.3	28.7	K
9.0		36.5	42.7		6.5		47.1	5.1	K	8.5	1	6.1	39.8	K	9.5		52.7	45.3		9.5		9.8	54.0	
8.4	11	26.2	56.6	K	9.5	40	15.7	16.8		9.3		43.7	52.7		9.5	29	23.7	9.0		8.7		45.7	11.1	K
9.5		52.9	13.5		9.3		16.5	2.3		9.5	2	6.4	3.0		9.2		39.7	17.0	*b*	9.5	52	7.8	41.5	
9.3	12	22.9	8.0	*b*	9.5		23.4	41.9		9.5		30.4	29.7		9.2		56.7	58.6	K	9.5		40.8	52.4	
9.4		39.4	37.3		9.5		30.1	48.8		9.3		53.8	3.0		9.5	30	11.3	55.3		9.2		46.9	32.5	
9.5	13	31.8	46.1		9.3		55.2	52.5		9.5	3	6.7	5.0		9.5		14.3	29.2		9.4		48.0	36.3	
9.4	14	59.2	6.2		9.5	41	28.8	5.8		9.4	4	43.7	16.5	*b*	9.1	31	0.0	31.8	K	9.2		51.3	30.8	
9.2	15	20.5	20.1	*b*	9.5		31.1	16.2		9.5	5	29.4	29.4		9.5		7.7	58.9		8.9		55.5	23.3	
9.5	16	0.8	20.2		9.5		33.4	7.8		9.5	6	20.3	31.0		9.4		24.8	54.0		9.5		58.1	5.5	
9.5		3.4	57.5		9.5		46.4	31.8	*b*	9.5		42.5	36.0		8.7		33.7	37.3	K	9.3	53	29.3	45.1	K
9.5		27.7	23.4		9.0		55.4	14.1	L	7.8		43.1	48.1	K	9.5	32	22.5	6.5		9.5		40.3	20.4	*R*
9.4	17	26.8	27.7		6.8	42	14.5	3.9	K	9.2	7	12.5	14.0	*b*	9.5		48.3	16.8		9.4	54	14.8	12.5	K
9.5		31.2	53.8		9.5		15.7	31 8		9.3	8	42.4	19.6		8.3		55.6	58.3	K	9.5		50.8	13.5	*a*
9.5		52.9	53.3		9.3		36.8	9.0		9.5		48.1	30.7		9.5	33	5.8	10.2		9.5	55	30.1	12.4	
9.5		54.8	7.4		9.5	43	9.7	31.0		9.5		56.0	37.0		9.1		24.3	52.7	K	9.5		33.8	34.2	
9.5		55.1	21.2		9.5		40.1	44.3		9.5	9	54.4	44.2		9.5	34	31.3	44.4		9.5		54.0	3.4	
9.5	18	30.4	21.0	K	8.7		52.7	58.1	L*b*	8.8		56.7	25.1	K*b*	9.5		46.6	52.4		9.5	56	17.0	9.3	
9.5		48.0	27.3		9.1	44	14.1	11.0	*a*	9.5		57.6	59.9		9.5		47.8	14.0		9.2		17.8	37.4	K
8.6	19	15.5	10.8	K	9.4		25.4	8.5		9.0	10	58.7	30.2	K	9.5	35	7.3	16.9		9.5	57	52.4	48.8	
9.0	20	16.9	39.5	*B*	9.5		43.7	23.8		9.4	12	15.5	3.1		9.5		10.3	37.5	*b*	9.0		53.3	15.5	K
8.9	21	11.0	27.9	K	9.4		59.1	56.3		9.5		41.7	49.5		7.6		39.5	12.4	K	9.5	58	5.7	7.7	
9.5		26.7	36.0		9.5	45	6.4	35.9		9.5	13	4.4	6.4		9.5	36	2.8	34.6		9.5		19.8	52.1	
9.5		48.0	12.4		9.0		11.8	57.4		9.1	14	12.8	6.4	K	9.5		13.0	11.4		9.5		54.0	55.4	
9.5	22	30.0	17.0		9.5		16.2	36.9		9.5	15	5.4	33.5		9.5		50.7	59.8		9.2	59	20.4	3.2	
9.5		32.7	12.5		8 9	46	6.0	54.8		8.7		11.4	40.4	K	9.5	37	20.8	49.5		9.5		33.3	53.7	
6.7		43.8	55.8	K	9.4		57.1	12.4		8.3	16	21.8	4.1		9.5	38	26.8	43.7		9.5		47.6	20.8	
9.5		54.2	1.8		9.0	47	14.4	31.4		9.5		24.2	55.0		9.1		28.3	27.6	*a*	9.5	0	3.3	35.3	
9.5	24	1.7	4.3		9.5		20.7	1.2		9.1		39.8	48.7	*a*	9.3		44.2	21.4		9.5		15.8	28.3	*b*
9.5		28.6	55.5		9.5		25.4	35.9		9.1	17	9.2	40.1	*ab*	9.0	39	7.3	24.5		9.5		45.1	52.5	
9.3		48.4	11.9	K	9.5		43.6	50.3		9.5		15.1	53.7		8.8		9.2	9.7		9.5		54.4	48.8	
8.2	25	1.9	5.8	K*b*	8.5	49	45.4	16.5	K	9.5		56.5	7.6		9.5		16.3	31.5		9.5	1	10.6	29.4	
		+	−				+	−				+	−				+	−				+	−	
10pr.		*30.18*	*3.18*		*10pr.*		*29.98*	*3.03*		*10pr.*		*29.83*	*2.88*		*10pr.*		*29.66*	*2.66*		*10pr.*		*29.53*	*2.45*	

2649 a				
9.4	20	17.6	39.8	*B*

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	15ᵐ		+7°			15ᵐ		+7°			15ᵐ		+7°			15ᵐ—16ᵐ		+7°			16ᵐ		+7°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	1	18.7	0.9	αB	9.3	20	6.2	14.7		9.1	38	19.6	37.6	α	9.5	56	40.3	26.1		9.5	12	41.4	50.4	αB
9.5		19.4	2.1	B	9.5		9.0	1.3		9.1	39	20.1	7.8	αb	8.3	57	13.1	46.7	L	9.3	13	1.4	29.5	
9.5		27.1	25.2		9.5		38.6	9.6		5.0		24.7	49.4	K	9.3		47.6	36.8		9.3		3.0	12.4	
9.5		58.7	16.7		9.5		46.4	34.9		9.2		45.0	52.0	K	9.4	58	4.9	39.5		9.1		6.2	24.9	α
9.5	2	43.7	30.8		9.5		54.6	27.2		9.5		54.3	7.8		9.2		33.6	10.1	b	9.5		8.2	31.7	
9.5		54.8	6.8		9.5		57.0	16.5		9.5		56.5	16.4		9.4	59	5.1	45.9		9.3		22.8	46.0	
9.5		59.4	27.6		9.5	21	18.9	42.6		9.5	40	9.2	40.5		9.5		6.1	33.3		9.5		41.9	8.7	
9.3	3	28.1	15.1		8.7		30.6	25.2	K	9.4		22.0	52.3		9.4		19.7	1.9	αB	9.3	14	11.2	21.9	
8.2		53.8	52.5	Kb	9.3		40.0	49.9		9.5		24.5	30.1		9.5		20.4	12.5		8.3		20.1	1.0	K
9.5	4	38.6	41.8		9.2	23	58.9	45.0	b	9.5		25.3	37.4		9.3		24.1	29.9		9.5		32.9	8.4	
9.5		53.2	56.1		9.5	24	35.5	57.4		9.5	41	20.6	4.2	B	9.3		37.3	30.8		9.0		36.3	20.2	
8.9	5	2.2	10.3	L	9.4		39.1	35.6		8.8		21.9	14.6	K	9.5		46.5	2.9		9.3		48.2	32.2	
8.8		40.2	21.1	L	9.4		50.3	17.5		9.5		27.4	2.2	b	9.5		49.8	2.0		9.0		49.5	28.2	
8.6		42.6	56.2		9.5	25	13.9	23.8		9.5	42	1.3	14.6		9.3		53.1	13.2		9.5	15	3.8	43.3	
9.5		54.4	9.3		9.4		27.5	19.8		9.3		11.5	46.9		9.5		53.5	0.9		9.5		23.1	43.3	
9.3	6	29.6	1.8		9.3		30.8	57.4		9.2		23.7	40.5		9.4		58.0	27.5		9.3		28.0	13.3	
9.5		36.3	8.3		9.0	26	3.5	12.0		8.6		25.8	56.3	K	9.1	0	1.0	59.0		9.4		43.6	20.1	αB
9.0		55.0	23.1		9.2	27	15.7	5.1		9.3		35.7	51.8		9.3		45.0	23.1	b	9.3		59.2	28.8	αB
9.3		56.2	31.9		8.2		45.4	17.3	K	9.5		46.4	5.2		9.3		51.4	51.3		9.5	16	3.1	53.0	
9.4	7	22.4	34.9		9.0	28	0.3	29.4	K	9.5	43	7.1	54.7		9.5		58.3	10.1		9.4		5.6	43.8	
9.5		24.1	15.5		9.5		12.2	11.2		9.5		33.0	36.5		9.5	1	25.0	1.7		9.2		37.1	29.7	
9.4		27.0	29.9		9.4		13.1	59.6		9.5		48.5	9.0		8.5		41.0	1.9	L	9.4		42.2	55.8	
9.5	8	2.6	20.4		9.5		20.7	37.4		9.2	44	2.6	14.8	b	9.5		57.5	21.2		8.6		56.7	3.3	Kb
9.5		4.2	45.4		9.5		45.5	24.1		9.5		37.0	23.0		9.5	2	1.4	42.6		6.0	17	8.3	16.8	K
9.5		20.8	42.9		9.5		46.6	29.8		9.0		50.3	41.0		9.5		47.6	37.6		9.3		8.8	29.2	
7.1		45.8	0.5	K	9.3		49.0	40.9		9.5	46	5.0	12.9		9.5	3	5.5	53.0		8.2		9.7	48.1	B
9.5		53.3	42.6		9.5		54.1	6.2		9.5		40.5	55.1	αB	9.3		12.7	57.8		9.2		18.2	42.7	
9.5	9	0.8	59.6		9.0	29	10.9	54.6	K	9.5	47	2.7	31.3		8.8		32.9	20.2		9.4		29.4	40.9	
9.5		22.8	34.9		9.5		12.8	6.5		9.5		6.6	50.6		9.5		51.9	16.4		9.0		34.0	44.9	B
9.5		29.4	5.5		9.5		12.9	34.3		9.2		15.9	23.4	b	9.3	4	5.6	9.5		9.2		35.6	7.8	K
9.5		53.5	46.8		9.3		24.0	17.5		9.5		23.8	0.3	αB	9.5		7.8	40.6		9.3		37.0	57.5	
9.5		54.0	15.5		8.7		25.0	40.8	K	9.5		25.6	29.8		8.1		21.2	51.0	K	9.5		50.0	52.8	
9.5		56.4	38.0		9.5		26.0	31.2		9.3		49.9	40.2		9.5		23.1	8.2		9.2	18	46.6	36.8	αb
9.5	10	34.1	2.9		9.5	30	35.1	14.8		9.4	48	12.9	4.1		9.5		28.9	16.7		9.2	19	8.2	36.5	αB
9.5	11	10.0	40.5		9.5		37.7	28.6		9.9		27.6	56.2		9.5		39.8	30.4		9.5		23.8	32.1	
9.5		36.8	54.8		8.7		59.8	53.9	K	9.2	49	20.2	53.0		9.5	5	4.1	53.7		9.5		56.6	3.2	
8.5		54.6	31.4	K	8.7	31	31.3	29.7	Kb	9.5		36.0	13.6		8.8		27.8	34.9	K	9.5	20	11.2	11.5	
9.5	12	43.7	39.5		9.5		32.9	10.8		9.4	50	10.6	45.5	B	9.5	6	0.0	26.0		9.3		12.4	50 8	
9.5		56.3	43.6		9.5	32	31.3	39.3		9.5		21.4	40.8		9.1		43.9	3.2	ab	8.7		26.8	58.2	
9.5	13	20.5	23.1		8.5		31.7	27.6	K	9.5		57.6	26.4		7.5		47.0	22.2	K	8.8		57.3	39.5	
9.5		55.5	46.6		9.5		55.3	40.5		9.0	51	13.1	37.0		9.5	7	12.4	36.2		9.5	21	6.5	5.6	
9.5	14	5.0	58.0		9.5		59.8	37.2		9.3		14.1	19.7		9.4		30.5	41.8	αB	9.5		21.7	21.7	
9.5		26.4	4.2		9.5	33	2.3	34.6		9.5		28.0	13.6		8.8		58.4	51.1	K	9.5		29.6	43.7	
9.5	15	13.3	49.9		9.5		15.1	25.5		9.5		42.3	48.5		9.5	8	48.3	10.5		9.2		31.0	30.5	αB
9.5		26.3	5.8		8.5		33.6	20.0	K	8.9		57.0	39.9		8.6		52.7	44.0	K	9.0	22	2.3	54.1	
9.0		29.7	51.3		8.9	34	17.8	31.0		9.4	52	25.7	3.0		9.2	9	29.3	53.9	K	8.9		15.0	6.3	
9.1		50.3	29.7	αBb	8.5		53.3	31.5	K	9.5		28.6	36.7		9.5		35.1	50.1		9.3		46.4	21.1	
9.5		59.9	58.6		8.9	35	23.4	26.9	K	8.6		32.1	7.6	Kb	8.5		59.2	30.8		9.5	23	25.6	37.4	
9.2	16	10.5	34.2	B	9.5		37.2	53.6		9.5		46.0	47.4		9.5	10	11.6	45.8		9.5		26.6	14.1	αB
9.5		11.1	25.3	αB	7.5		48.2	20.7	K	8.7		54.0	21.3	K	9.5		19.0	3.3		9.5		38.0	11.8	αb
9.5		16 8	59.7		8.7		49.1	23.1	K	9.4	53	4.3	3.7		9.4		21.1	4.9		9.3		46.5	12.1	αB
9.3		40.6	4.0	K	8.8		51.1	10.4		8.5		9.7	13.0	K	8.3		32.7	22.7	K	9.5	24	3.0	13.1	
9.5	17	3.5	22.6		9.5	36	15.2	33.4		9.2		29.9	6.0		9.5		33.6	46.5		8.0		12.6	12.7	Kb
9.5		11.2	10.6		9.5		22.4	12.7		9.5		36.4	44.4		9.5		50.4	1.6		9.5		15.4	11.2	B
9.5		40.1	57.1		9.5	37	19.0	24.4		9.1		54.4	15.2	α	8.7	11	14.6	41.3	K	8.9		21.8	58.3	K
9.4	18	1.2	23.8		9.5		19.7	50.5		~~9.5~~	55	~~4.7~~	~~0.8~~		9.1		29.1	4.3	ab	9.3		23.7	32.9	
9.5		59.9	21.0		9.5		33.0	54.8		8.5		6.1	37.6		8.2		31.6	37.4	K	9.4		38.2	58.9	
9.5	19	8.6	12.2		9.2		33.7	32.9		9.5		17.4	0.1		8.5	12	21.3	32.0	K	9.5	25	39.6	35.8	
9.2		25.5	25.7	b	9.0	38	4.7	57.4		9.3		52.4	12.7		9.4		28.6	12.0		9.5		49.7	8.9	
9.5		38.7	39.1		9.1		7.9	58.0	α	8.3	56	24.6	21.7		9.4		28.7	22.6		9.4	26	16.1	23.2	
		+	—				+	—				+	—				+	—				+	—	
10pr.		29.43	2.26		10pr.		29.33	2.04		10pr.		29.25	1.83		10pr.		29.18	1.62		10pr.		29.13	1.44	

3084ᵐ

9.5	58	9.9	26.1

3201—3260

	16ʰ		+7°	
m	′	″	′	
9.0	26	25.2	24.6	
8.2		46.0	53.1	K
9.5		48.1	20.9	αB
9.0		58.2	21.4	B
9.5	27	29.6	49.5	
9.2		55.8	41.5	R
8.4		58.1	9.2	Kb
9.4	28	59.7	57.1	
var	29	49.6	23.3	K
9.5	30	3.7	40.6	
9.2		7.0	57.8	
9.0		18.8	30.6	K
9.4		24.7	55.8	
9.0		33.7	35.7	K
9.2	31	8.2	7.8	
9.5		22.0	1.7	
9.5		50.4	25.0	
9.5	32	53.2	18.1	
8.7	33	12.7	54.6	Kb
9.4		43.9	25.3	αB
9.5	34	24.6	20.9	
9.5		45.3	14.6	
9.5	35	29.5	58.7	
9.5		31.7	36.1	
9.4		44.5	4.6	
9.4	36	12.1	18.0	
9.5		41.2	54.5	
8.7		49.7	48.0	
9.0	37	2.5	6.6	
9.2		5.2	56.3	
9.5		6.5	22.9	
9.5		11.1	59.1	
8.5		17.1	36.1	Kb
9.5		41.7	49.1	
9.3		51.9	4.6	
9.5		56.8	34.7	
9.3		58.8	5.1	
9.2	38	30.2	13.9	
9.5		45.8	30.1	
9.2		46.4	29.7	αB
9.5	39	4.9	57.3	
9.5		8.1	2.9	
9.0		13.6	37.8	
8.8		30.8	54.6	K
9.3		49.2	29.5	
9.5		57.7	25.4	
9.3	40	6.8	4.4	K
9.3		23.8	7.8	Kb
9.3		43.0	52.2	
9.5		44.4	58.8	
9.3		49.1	0.4	
9.5	41	4.3	52.8	
9.3		4.3	8.5	
9.5		11.5	40.9	
9.3	42	42.7	51.8	
6.0	43	16.7	30.9	K
9.5		18.9	15.0	
9.0	44	31.6	59.2	K
9.0		48.3	58.5	K
9.4		54.3	51.6	αB
10pr.		+ 29.08	− 1.18	

3261 — 3320

	16ʰ—17ʰ		+7°	
m	′	″	′	
9.4	45	13.1	13.9	αB
9.4		33.6	13.5	αB
9.5		35.5	46.9	
9.5		56.7	18.4	
9.0	46	19.5	45.2	Kb
9.2		37.4	12.5	K
9.3	47	4.5	39.6	
9.1		34.9	34.4	K
9.0		41.7	38.2	K
9.5	48	34.1	55.9	
9.5		35.1	31.9	αB
9.2		42.8	3.9	b
9.5	49	5.6	21.9	
9.5		32.8	16.7	
9.1	50	15.9	32.3	K
9.5		33.1	38.9	
9.2		59.9	10.8	B
9.0	51	8.3	21.2	K
9.5		11.0	57.4	
9.3		17.9	9.0	α
9.1		39.7	48.3	α
9.3	52	3.1	40.3	
9.5		23.4	30.3	
9.5	53	28.6	58.2	
9.0		33.5	29.2	
9.5		50.5	5.9	αB
*7.2	54	17.2	38.8	B
9.0		25.6	17.0	
9.4		37.6	13.5	
9.3		44.4	42.7	
8.5		57.8	52.9	K
8.5	55	6.0	25.3	
9.2	56	32.0	9.4	b
9.4	57	2.6	8.7	
9.4		24.6	5.2	αB
9.5		26.6	55.5	
9.4		50.1	42.3	
9.4		59.4	15.2	
9.3	58	1.8	35.7	
9.0		55.7	53.1	
9.5		59.0	4.1	
9.1	59	39.0	58.7	K
9.3		43.5	2.2	
8.7		43.7	24.6	
9.5		51.1	52.7	
9.0		54.5	0.1	
9.5		58.7	7.0	
9.5		59.0	20.6	αB
9.5	0	54.0	31.6	
9.5	1	5.4	1.0	
9.1		21.3	21.5	ab
9.5		41.4	3.9	
9.5		48.4	4.8	
9.5	2	3.1	6.8	B
9.5	3	50.4	13.0	α
9.5		55.1	59.4	
9.1	4	13.5	5.0	α
8.6		17.2	22.1	Kb
9.0	5	21.3	25.7	B
9.3		36.1	24.5	α
10pr.		+ 29.03	− 0.94	

3286ᵃ

9.6	53	56.4	0.2	B

3321 — 3380

	17ʰ		+7°	
m	′	″	′	
7.3	6	0.0	55.4	L
9.3		48.3	23.6	
9.0	8	28.1	14.9	
8.2		48.5	0.0	B
9.5		52.0	37.1	
9.0		53.2	16.9	K
9.5	9	44.3	20.4	
9.3		47.7	40.8	
9.1	10	4.9	35.4	α
9.0		11.9	27.6	
9.0		12.5	14.3	Kb
9.2		14.5	7.1	K
9.2		15.1	59.8	αB
9.4		38.0	16.0	αB
8.7	11	8.0	16.7	K
9.5		30.3	54.9	
9.2		31.6	24.8	K
9.0	12	30.8	58.2	
8.8		36.5	38.0	Kb
9.5	13	38.0	58.7	
9.4		38.3	13.3	
9.5		51 0	28.0	
9.4		51.5	26.9	αB
9.4		56.4	33.2	αB
9.5	14	15.2	22.6	
9.5		44.9	23.0	
9.5		53.7	53.6	
9.5		56.6	3.4	
9.4		59.8	35.1	
9.2	15	1.0	52.8	
9.5		30.5	17.8	
9.5		43.0	31.9	
9.5		54.8	19.5	
9.4	16	2.2	3.2	
9.3		21.3	14.0	αB
9.3		47.1	25.3	
9.5		54.2	6.1	
9.3	17	7.5	39.1	αB
9.2		9.2	23.3	
9.5		27.7	33.4	αB
9.0		52.1	35.1	
9.0	18	1.6	24.5	
9.5		8.7	3.2	
*9.5		20.8	39.6	
8.0		39.8	37.7	K
9.5		52.6	26.8	
9.2	19	6.5	7.5	b
6.5		20.8	43.6	L
9.4		21.0	7.8	
8.6		24.8	36.8	L
8.6		25.9	45.2	L
9.1		57.5	55.3	K
9.5		59.5	31.0	
9.2	20	4.2	53.6	K
9.5		22.4	40.6	B
9.4		23.4	4.2	
8.8		34.4	42.9	K
8.8	21	31.7	23.7	K
9.3		42.4	45.9	
9.4		55.0	9.8	
10pr.		+ 29.00	− 0.65	

3364ᵃ

9.7	18	35.0	32.6	B

3381—3440

	17ʰ		+7°	
m	′	″	′	
9.5	22	12.5	3.0	
8.0		20.5	48.7	K
9.5		33.7	54.6	
9.1		35.8	37.9	K
9.0	23	2.8	51.7	K
9.2		41.9	20.5	
9.1		50.2	6.5	ab
9.3		52.7	25.2	
9.3		58.9	22.7	αB
9.5	24	41.7	40.4	
8.5		49.4	56.1	K
8.8	25	3.5	37.6	K
9.5		20.9	3.2	
9.4		31.0	59.7	
9.4		59.4	36.9	αB
9.5	26	6.9	58.7	αB
9.0		11.2	40.4	K
7.8		11.8	49.2	Kb
9.0		29.6	24.6	K
8.1		32.3	16.6	K
8.5		40.1	57.6	L
9.3	27	9.4	54.4	
9.5		34.7	35.3	
9.2		34.9	20.7	K
9.3	28	7.7	22.5	
9.1		16.4	55.1	K
9.2		21.2	44.2	K
9.3		33.8	1.1	
9.5		54.3	36.3	
8.2	29	3.6	7.2	L
9.5		5.0	15.2	
9.4		28.3	40.6	αB
8.0		34.1	28.6	L
9.5		50.2	24.9	
9.5		50.6	14.4	
9.1		55.4	33.2	α
9.0	30	10.6	50.2	
8.8		12.5	2.6	
8.5		12.7	26.3	L
9.5		18.8	21.4	
9.4		40.5	3.2	αB
9.5		41.2	8.4	B
9.0	31	7.8	9.3	L
9.5		16.8	56.1	
8.4		22.2	19.0	K
9.0		30.6	12.7	K
8.5		40.7	12.1	K
8.6		52.9	19.3	K
9.0	32	32.4	33.6	
9.3		32.4	46.2	αB
9.3		43.6	15.9	
9.0		45.4	8.5	
9.5		56.6	19.1	
7.2		57.9	52.7	Kb
9.5	33	16.6	5.1	
9.3	34	12.1	24.2	
9.2		32.8	45.7	
9.5		39.0	36.0	
9.5		43.8	58.6	αB
9.5		59.5	57.9	αB

3441—3500

	17ʰ		+7°	
m	′	″	′	
9.5	35	5.1	21.0	
9.2		14.3	38.8	b
9.5		32.5	28.0	
9.5		37.5	2.6	
9.1		41.3	15.8	α
9.3		42.8	17.3	α
9.5		53.0	57.5	
9.5	36	2.2	5.7	
9.5		3.9	15.8	
8.8		51.7	55.1	K
8.7	37	0.9	54.1	K
9.1		4.4	22.1	α
9.5		20.1	13.7	B
9.1		31.2	52.9	α
9.0		31.6	9.5	K
9.5	38	2.3	23.3	
9.5		6.0	28.5	
9.5		29.6	41.8	
9.5		29.9	31.0	
8.9		40.7	33.3	
9.3	39	7.9	31.3	αB
9.4		8.4	35.3	
9.5		13.3	15.5	
9.4		15.9	41.8	αB
9.4		54.2	53.2	
9.5	40	6.4	35.4	
9.0	41	18.3	14.8	
9.5		20.0	57.1	
9.4		28.6	42.8	αB
8.9		31.8	48.9	
9.5		47.6	44.4	
9.5		57.0	1.4	
9.5	42	19.3	54.3	
9.5		31.1	39.1	
9.5		34.2	18.0	
9.5		56.4	22.4	
9.5	43	9.8	53.2	
9.3		11.9	28.0	
9.1		24.8	43.6	α
8.8		26.5	27.0	
7.8		34.6	16.2	Lb
9.0		41.6	58.0	B
9.3		44.5	58.1	αB
9.0	44	4.8	33.2	
8.8		12.7	46.1	
9.0		33.4	35.6	
9.1		43.8	27.0	α
7.1		55.4	26.3	B
9.4		58.1	26.3	αB
9.3		58.3	11.6	αB
9.5	45	2.1	45.0	
9.5		2.6	58.9	αB
9.2		22.2	8.6	
9.3		37.2	32.5	
9.3		38.0	58.7	
8.5		55.6	46.3	B
9.5	46	19.9	9.1	
9.5		27.4	28.3	
8.8		46.5	4.4	K
8.8		46.5	19.6	
10pr.		+ 28.98	− 0.45	
10pr.		+ 28.97	− 0.27	

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	17ʰ—18ʰ		+7°			18ʰ		+7°			18ʰ		+7°			18ʰ		+7°			18ʰ		+7°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.2	46	52.6	2.5	*a*	9.4	1	32.7	55.4		8.6	10	35.2	5.5	*Kb*	9.5	18	35.3	52.1		9.1	26	26.3	19.7	
9.3		55.5	21.8	*a*	9.5		33.6	36.0		9.5		53.5	12.0		5.8		40.8	57.3	K	8.7		28.0	35.3	
7.5		57.7	57.8	*B*	9.0		42.0	54.2	B	9.5	11	3.3	51.2		8.0		49.7	1.2	K	9.3		34.9	29.2	
9.5	48	0.8	9.0		9.2	2	0.8	12.0		9.0		21.1	12.3		9.4		56.0	52.0	*aB*	9.4		54.5	46.5	
9.5		14.5	9.3		9.3		3.5	52.5	*a*	9.5		23.9	27.0		9.2		57.0	31.7		9.4		56.4	55.4	
9.5		33.0	57.5		9.5		6.1	47.3		9.5		41.3	48.1		9.5		57.1	58.5		9.5	27	8.8	9.4	
9.0		50.1	23.6		9.4		13.3	22.6		9.5		50.6	3.3		9.4	19	10.5	54.6	*B*	9.5		10.4	53.3	
9.3	49	12.8	31.8		9.3		23.7	26.1	*a*	9.5		54.2	14.7		9.5		26.6	4.6		9.5		12.0	35.2	
9.0		14.5	58.6	K	9.3		26.0	24.9	*aB*	5.8	12	9.5	12.1	R	8.7		28.2	36.3	*Kb*	9.5		13.0	29.3	
9.3		23.3	24.3	*aB*	9.3		28.7	14.7	*aB*	9.5		18.2	46.2	*aB*	8.7		40.3	23.4	K	9.4		27.8	32.0	
9.5		57.7	45.3		9.0		35.4	59.9		9.1		29.1	6.7	*a*	8.9		43.1	55.1		8.8		34.5	42.0	
9.5	50	29.2	52.2		9.4		39.4	10.7		9.1		33.5	41.0	K	9.5		47.4	31.3		9.3		36.3	58.5	*aB*
9.3		36.0	3.1	K	9.4		48.3	2.1		9.4		42.0	24.6		9.0		52.0	1.9		9.5		47.4	17.3	
9.5		52.8	7.9		9.4		50.8	26.2		9.5		42.9	18.0	*aB*	8.0	20	2.8	38.8	K	9.0		53.8	28.5	
9.5	51	24.1	32.8	*aB*	8.8	3	18.2	47.1	L	9.5		55.4	57.5		9.5		27.1	52.3		9.4		54.5	14.8	
9.3		24.4	31.3	*aB*	9.2		24.8	53.9		9.4		58.7	41.4	*a*	9.5		32.3	45.0		9.5	28	6.3	26.1	*aB*
9.4		29.1	59.7	*B*	9.5		25.0	45.3		9.5	13	3.3	22.0		8.5		35.5	58.2	*B*	9.4		14.4	38.4	*aB*
9.4		29.4	8.3		7.5		38.0	36.1	L*b*	8.0		9.7	0.9	K	9.4	21	3.7	35.6		9.5		15.3	11.1	
9.5		33.5	31.2	*a*	9.5	4	3.3	20.2		9.5		32.6	25.0		9.1		3.8	3.1	K	9.2		19.0	20.0	*aB*
9.5	52	11.3	28.7		9.3		5.9	8.5		9.3		34.5	36.3		9.5		6.1	4.4		9.3		28.7	45.0	*a*
9.0		24.1	43.5	K	9.5		26.9	37.5		9.5		35.0	19.8		8.9		10.7	15.7		9.5		35.1	31.3	
9.5		51.4	44.5		9.5		28.9	9.2		9.5		41.5	33.1		7.7		11.1	52.5	*B*	9.5		41.8	33.9	
9.5	53	9.8	43.6		8.9		38.0	52.2	K	9.5		42.1	46.6		9.5		18.2	36.5		8.2		51.0	27.2	*B*
9.4		23.1	46.4	*aB*	8.8		42.5	22.1	K	9.5		50.1	10.7		9.4		19.5	6.9	*aB*	9.5		56.0	55.1	
9.1		27.3	58.8	K	9.0	5	19.4	5.2		9.5	14	2.0	52.0		9.5		27.1	4.7		8.9		55.5	58.2	K*b*
9.2		48.3	26.5		9.5		33.9	27.1		9.5		2.3	56.0		9.5		51.7	54.2		9.5	29	11.1	9.5	
9.0	54	7.7	38.7	K	9.5		44.6	32.0		9.4		5.9	37.3		8.7		59.0	21.9	K	9.2		18.0	34.8	
9.5		25.7	55.9	*a*	9.5		47.5	7.2		9.5		23.8	58.3		9.4	22	0.6	4.8		9.5		45.0	4.2	
9.3		27.8	58.7	*aB*	9.0	6	3.6	26.5	K	9.3		32.4	5.1	*aB*	8.9		4.3	7.1	K	9.4		45.1	43.2	
9.5		52.2	54.8		8.9		8.1	19.6	K	9.5		33.6	54.2		9.3		10.3	8.8	*aB*	9.1	30	6.9	43.8	*a*
9.3	55	11.1	25.8		8.0		21.4	45.3	B	9.1		40.6	0.1	K	9.3		27.3	45.0		9.5		7.2	2.9	
8.5		24.3	3.4	K	9.5		22.2	9.5		8.7		41.9	20.2		7.8		28.0	15.7	K	9.0		11.0	54.5	B
8.8		24.4	19.1	K	9.5		53.0	59.5		9.5		48.2	5.3	B	9.5		29.8	51.8		9.0		13.4	24.6	K
9.4		31.6	46.8		9.2	7	10.7	59.3		9.0	15	5.0	4.2	K	9.5		31.7	47.4		7.8		14.4	24.6	K
9.5		35.9	17.5	*aB*	9.3		11.4	54.6		9.4		9.2	7.8		9.5		34.2	33.3		9.1		28.0	47.3	*a*
8.8	56	13.3	55.6	K	9.0		17.6	4.3	K	9.5		10.2	29.0		9.4		34.9	47.3		9.5		30.5	57.7	
8.3		13.3	54.8	K	9.5		25.1	43.2	*aB*	7.0		18.9	29.1	B	9.4		37.8	18.9		9.5		34.1	5.8	
9.5		18.7	44.3		9.4		26.7	49.8		8.1		25.4	9.3	K	9.5	23	1.4	30.9		9.5		46.6	19.8	
9.3		24.3	7.8	*aB*	9.5		27.5	33.4		8.7		32.5	34.4		9.0		24.5	26.5	K	8.9		49.0	57.5	K
9.5		30.2	42.0		9.5		40.0	25.1		9.4		46.3	31.5		9.3		43.0	1.1		9.3		54.1	11.2	
9.5		35.6	48.2		9.5		41.8	33.5		7.7		48.5	8.5	K	8.5		51.1	49.7	K	8.7	31	1.0	52.8	K
9.4		43.0	8.0	*aB*	9.5		43.0	21.3		9.0		59.5	15.4		9.5		51.2	33.6		9.5		9.9	4.0	
9.5		58.9	10.2		9.3		51.1	59.9		9.5		54.7	12.8	*a*	9.3		54.7	9.8	*aB*	9.5		19.1	34.3	
9.3	57	0.8	0.8		9.2		58.2	47.5		9.2	16	9.0	23.4		7.6		56.3	58.8	K	9.0		34.6	43.6	
9.5		30.8	19.3		9.3	8	4.4	32.9		9.0		27.9	0.9	K	9.5		58.0	5.3		9.5		36.0	50.0	
9.5		41.6	15.8	*aB*	8.9		12.0	55.7		9.5		31.1	43.0		9.5	24	15.0	48.3		9.0	32	4.2	0.5	B
9.5		43.4	50.3		9.5		12.3	38.4	*a*	9.4		33.5	21.1		9.3		15.0	6.3		9.5		5.6	56.0	
9.5	58	4.7	53.7		9.0		40.7	8.2		9.5		36.6	33.4		9.2		25.2	53.3	K	9.5		7.9	33.0	
9.4		14.1	39.6		8.7		47.2	0.1	K	9.5		40.8	12.3		7.5		28.0	55.6	K	9.4		9.2	7.8	
8.8		18.1	21.6	K	9.5		57.3	51.3		9.5		43.7	46.8		7.5		41.7	7.9	B	9.4		12.9	20.2	
9.2		29.5	2.2	K	9.5	9	5.0	2.1		9.5		57.5	47.9		9.5		42.0	37.5		9.5		13.1	8.9	
9.4		37.7	8.8		9.5		18.3	2.8		9.5	17	1.7	32.3		9.5		53.9	36.9		9.5		13.8	4.9	B
7.8		53.4	5.2	K	8.6		18.9	58.4	K	9.5		7.4	6.0		9.4	25	3.5	20.1	*a*	9.5		15.3	2.9	
9.3		59.1	43.0		9.3		31.4	48.1		9.2		26.9	3.9		9.3		32.9	33.7		9.5		24.4	39.9	
9.5	59	26.6	23.3		9.5		43.9	37.2	*aB*	9.5		37.8	59.6		9.4		41.6	56.1		9.5		28.2	55.5	
9.1	0	0.7	8.8	K	9.5		49.6	32.0		7.5		44.1	9.1	K	8.4		49.7	20.3		9.2		33.9	10.3	
9.5		25.4	9.4		9.5		53.6	34.0		9.5		51.5	45.3		9.5	26	0.5	32.5		8.5		46.0	45.5	
9.5		34.5	36.1		9.5	10	5.1	35.2		9.5	18	2.9	57.0		9.3		6.1	23.3	*a*	6.5		50.7	13.3	S
8.6		36.4	59.0	K	9.5		14.6	32.0	*aB*	9.2		20.5	2.4		9.5		12.8	28.0		7.8	33	4.6	38.1	B
9.5		48.7	38.8		9.0		22.7	53.5	K	9.4		23.7	58.8		9.2		25.3	18.9		9.2		29.0	44.2	
		+	—				+	+				+	+				+	+				+	+	
10 pr.		*28.96*	*0.07*		*10 pr.*		*28.96*	*0.09*		*10 pr.*		*28.97*	*0.21*		*10 pr.*		*28.97*	*0.32*		*10 pr.*		*28.98*	*0.44*	

3801—3860 (18h, +7°)

m	m	s	'	
9.5	33	35.3	39.8	
9.4		59.0	51.3	
9.5		59.3	47.1	
9.4	34	4.4	35.3	
8.0		22.0	46.6	B
9.4		46.8	15.0	aB
9.5		48.3	58.9	B
9.4		54.9	49.6	aB
9.5	35	3.4	27.5	
9.4		4.8	15.3	aB
9.3		7.3	55.9	aB
9.5		13.5	31.0	
9.4		17.1	27.9	
9.2		58.2	35.1	
8.6	36	4.4	34.8	K
8.1		5.0	8.3	L
9.3		5.3	27.6	
8.8		8.9	56.8	K
*9.5		21.9	44.1	
9.5		55.3	7.0	
9.4	37	10.8	21.7	
9.5		17.3	31.2	
8.8		30.1	20.6	K
8.1		38.4	50.3	K
9.5	38	7.4	49.7	aB
9.2		10.7	23.4	
9.5		16.4	36.5	
9.5		23.1	0.1	
9.0		28.1	13.1	
8.8		35.4	45.6	
9.5		42.0	35.7	
9.4		44.9	3.8	
9.3	39	10.1	50.8	
8.9		26.2	56.9	
9.5		28.9	49.5	
8.8		49.0	8.8	
9.5		53.1	52.8	
9.4	40	0.0	25.5	
9.5		37.4	24.5	
9.5		51.3	21.5	
8.3		56.3	33.9	S
8.4	41	10.4	57.6	K
9.5		12.7	7.9	
9.4		17.0	4.2	
9.4		17.8	55.2	
9.2		21.2	27.3	
9.5		26.4	47.2	aB
9.4		44.8	51.7	aB
8.0		45.2	46.7	L
9.5		56.2	56.6	
9.5	42	0.5	30.9	
9.5		4.2	22.3	
9.3		17.9	46.8	
9.5		21.4	54.8	aB
9.5		27.1	12.5	
9.0		30.3	43.8	
9.5		57.4	52.6	
9.5	43	2.0	21.7	
9.5		7.0	51.0	
9.4		12.4	45.4	
10pr.		+28.99	+0.56	

3861—3920 (18h, +7°)

m	m	s	'	
9.0	43	17.9	57.7	B
7.0		24.5	17.6	Kb
9.5		39.5	57.9	aB
9.5	44	2.9	21.7	
9.4		11.1	59.9	
9.4		14.7	35.9	
8.7		18.1	54.7	
9.3		29.5	57.3	
9.5		39.8	34.5	
9.3		48.9	41.3	
9.4		49.9	43.7	aB
8.5	46	0.4	39.4	L
8.7		3.5	6.7	Kb
9.2		4.4	54.1	
9.3		5.9	1.3	
8.0		6.1	43.0	L
9.5		13.6	59.9	
9.5		23.3	50.9	
9.5		27.8	24.8	
9.4		41.7	51.4	
9.5		42.0	24.9	
9.4		45.1	40.7	
9.4	47	4.2	43.3	
9.5		5.6	32.2	
9.1		10.6	33.4	a
9.0		11.5	52.7	K
9.4		14.3	13.3	aB
9.5		16.8	25.6	
9.4		29.2	4.1	
9.3		29.3	49.5	K
9.5		36.0	52.6	
8.7		44.4	55.6	K
8.5		47.3	46.5	K
8.4		50.3	13.4	B
9.5	48	22.2	2.4	
9.5		50.3	52.5	
9.1		59.6	24.9	b
8.1	49	10.3	45.4	L
9.5		27.9	48.9	
9.5		36.8	2.4	
9.5		39.7	59.7	
9.5		59.6	13.2	
9.5	50	11.2	14.0	aB
9.4		17.1	10.5	
9.4		20.2	45.8	
9.4		31.0	24.8	
9.5		34.7	58.5	
9.5		40.0	24.1	
9.5		54.1	7.2	
9.2	51	10.6	4.4	
9.2		11.8	48.1	
8.7		16.1	12.5	
9.5		31.9	57.9	
9.4		39.5	18.3	
9.5		40.7	44.3	
9.4		48.2	6.9	
9.5		50.2	50.6	
9.2	52	1.4	32.2	K
8.4		2.0	3.8	K
9.5		22.0	11.1	
10pr.		+29.00	+0.68	

3921—3980 (18h—19h, +7°)

m	m	s	'	
9.1	52	26.3	15.4	a
9.5		34.5	48.2	
8.8	53	5.2	53.8	
9.5		6.1	40.8	
9.3		21.3	53.1	a
9.4		22.0	35.5	B
9.5		51.3	33.2	aB
9.3		58.2	15.4	
9.5	54	1.1	14.9	
9.4		11.8	40.1	aB
8.6		22.9	4.6	K
9.5		23.5	25.3	
9.5		44.8	53.7	
8.3		48.0	36.9	
8.2	55	1.0	2.8	B
9.5		2.5	9.4	
9.5		9.9	2.6	aB
9.4		18.3	58.8	
9.5		25.2	31.1	
9.5		31.2	26.0	
9.5		49.6	10.8	
9.5		52.5	52.8	
9.4	56	4.1	12.0	
9.1		21.0	5.0	a
9.0		28.4	8.7	
8.8		46.7	53.4	
9.3		58.6	59.9	
9.4	57	1.2	14.6	
9.3		17.1	50.0	
9.4		18.4	12.2	aB
9.3		26.8	2.7	aB
9.4	58	17.5	40.3	
9.5		34.5	16.1	
9.0		38.0	0.8	K
8.5		38.9	27.3	K
9.5		39.1	31.2	
9.5		40.3	30.5	
8.8		57.1	6.3	K
9.2	59	1.1	7.7	
9.4		14.2	49.0	
9.2		22.0	42.9	
9.0		36.5	28.4	
9.2		41.2	47.1	
9.3		43.3	27.7	
9.5		47.9	48.3	B
9.5	0	3.5	28.6	
9.2		3.9	25.5	aB
9.5		9.3	40.2	
9.5		9.8	4.2	
9.0		15.5	54.2	
9.0		25.7	57.5	
9.5		32.8	16.6	
9.5		40.3	35.4	
9.5	1	35.0	22.5	
9.5		43.5	14.0	
9.2		45.0	44.8	b
9.5	2	9.7	28.1	
9.5		15.6	39.2	
9.4		36.1	10.5	
9.4		41.3	15.7	
10pr.		+29.02	+0.83	

3981—4040 (19h, +7°)

m	m	s	'	
9.3	2	45.2	46.4	
9.5		53.0	18.1	
9.5		53.9	27.2	
9.3		57.8	25.9	
9.2	3	26.3	49.5	
9.5		37.0	4.8	
7.2		58.4	53.6	S
8.0	4	26.2	44.7	Lb
9.4		40.2	47.8	
9.5		45.8	22.1	
9.5		58.0	52.0	
9.3	5	2.0	41.6	
8.9		15.4	14.6	
9.5		31.6	14.2	
9.4	6	19.1	59.9	B
9.5		23.7	59.5	
9.5		28.8	48.8	
9.5		42.0	41.7	
9.3		47.0	37.8	
7.7		58.1	16.4	B
9.4	7	5.9	37.7	
7.2		10.6	31.8	P
7.8		48.3	50.7	L
9.4	8	21.4	10.9	
9.4		45.8	13.3	
9.2	9	0.6	47.3	
9.5		11.1	5.8	
9.5		35.0	6.0	
9.4		37.8	13.6	
9.5		56.3	53.8	
8.6		58.7	8.4	
9.5	10	17.7	29.1	
8.7		18.8	41.8	
9.5		21.3	51.6	aB
8.7		26.0	33.8	
9.3		27.6	32.5	
9.4		33.1	21.0	
9.5		44.4	14.8	
8.6		44.9	6.4	Lb
9.0	11	7.7	25.1	
9.4		10.0	50.7	
9.5		20.0	54.9	aB
9.5	12	13.1	2.9	aB
9.5		19.0	46.1	
9.5		33.3	1.8	
8.8		38.1	50.6	
8.7		39.7	55.7	K
7.8		41.4	31.6	Kb
9.5	13	25.6	38.9	
9.5		29.5	45.4	
9.4		32.1	21.4	
9.4		40.8	6.0	
9.4		44.1	22.6	aB
9.3		50.2	5.0	
8.5	14	8.9	1.2	
9.5		16.8	33.7	
9.5		27.0	27.5	
9.4		33.3	7.6	
9.5		41.0	41.6	
9.4		54.3	56.3	
10pr.		+29.04	+1.00	

4041—4100 (19h, +7°)

m	m	s	'	
9.5	14	58.4	49.5	
*9.3	15	11.0	59.6	aB
9.0		28.9	23.5	
9.5		29.3	18.6	
8.3		35.3	16.0	K
9.2		42.8	27.3	
8.7		43.9	39.0	K
9.4		45.0	16.0	
9.2		46.2	18.7	
9.5	16	1.5	43.5	
9.5		12.0	41.8	
8.4		13.7	14.7	
9.4		17.6	11.8	
9.3		23.8	53.8	
9.0		26.0	29.0	
9.5		36.5	53.0	
9.4	17	15.1	38.7	
8.7		20.6	26.3	
8.9		20.7	18.6	
9.5		23.9	37.3	
9.5		41.8	11.4	
9.4		49.0	13.8	
9.2	18	15.4	36.0	
8.6		15.8	22.5	K
9.5		17.5	11.1	
8.5		34.6	41.4	K
9.5		40.4	27.3	
9.0		41.0	24.0	Kb
9.5	19	10.5	48.5	
9.5		35.6	15.4	
9.0		37.4	43.3	K
9.5		43.6	31.0	aB
9.5		44.3	2.4	
9.4	20	1.4	22.3	
9.5		17.2	24.1	
9.5		23.8	11.8	
9.5		46.7	43.9	
9.5	21	2.8	59.0	a
9.1		8.0	59.4	a
9.4		9.5	19.0	
9.5		15.9	10.6	
9.3		26.8	25.2	aB
9.5		39.4	2.6	
9.4		42.6	22.3	
8.4		42.9	15.0	
9.5		46.5	53.0	
8.5		55.7	45.3	
9.5	22	0.0	12.4	
9.4		5.1	3.7	
9.5		6.9	56.5	
9.5		13.3	52.8	
9.5		16.8	1.0	
9.2		21.9	15.2	
9.0		27.3	27.3	B
9.5		27.9	6.3	
9.4		39.0	4.9	
9.5	23	8.0	30.0	
9.5		8.4	8.4	
9.5		16.2	55.7	
9.2		30.8	37.1	K
10pr.		+29.07	+1.13	

3818a 9.6 | 36 10.3 | 31.5 | B

4041a 9.6 | 15 3.1 | 59.4 | B

4101—4160					4161—4220					4221—4280					4281—4340					4341—4400				
	19ᵐ		+7°			19ᵐ		+7°			19ᵐ		+7°			19ᵐ		+7°			19ᵐ—20ᵐ		+7°	
m		″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.9	23	33.1	33.7	K	9.5	31	11.6	50.2	*a*	9.3	39	53.0	55.2		8.7	46	36.2	54.7	K	9.2	54	9.3	34.7	
9.5		38.5	45.1	*aB*	9.4		12.2	5.5		9.4		53.6	52.2	*aB*	8.8		44.9	38.3		9.5		15.4	3.0	
9.3		42.2	43.4	*aB*	9.4		15.5	10.0		9.4	40	18.0	42.0		9.1		48.8	50.8	*aB*	8.9		32.9	24.8	K
9.4		45.5	53.1		8.5		34.6	17.8	P	9.0		24.5	34.8		9.4		53.4	49.5		9.5		43.9	21.4	
9.3		49.4	35.0		9.5		47.5	21.6		9.0		38.8	0.8	K	8.3	47	18.1	31.7		9.5	55	5.0	7.3	
9.5		53.9	17.7		9.3		48.3	25.5		9.5		34.8	44.2		9.4		31.3	37.9		9.5		33.8	36.2	
9.0	24	5.3	19.5		9.4		52.6	14.3		8.6		37.4	17.8	K	9.5		43.6	25.5		9.5		36.8	52.5	
9.4		7.2	2.3		9.5		56.5	6.9		9.5		38.9	40.0		9.3		45.7	59.1		9.2		47.6	42.3	
9.5		13.5	0.6		9.0	32	0.9	55.0		9.5		49.6	9.3		8.7		46.8	48.0		7.9		53.1	59.1	Kb
9.4		21.0	44.2		9.1		3.4	3.2	*a*	9.2		49.8	51.7		9.3		47.2	5.3		9.5	56	1.1	7.3	
9.5		23.5	5.2		8.0		38.6	31.4	P	9.5		56.0	46.0		9.5	48	9.1	28.9		9.0		18.1	5.7	
8.9		41.8	2.0	B	8.1		39.0	41.0	B	9.5	41	21.5	5.4		9.2		10.1	32.4	*aB*	8.7		25.3	55.3	K
9.5		47.9	26.4		9.5		47.2	26.4		9.5		26.4	1.4		9.2		17.3	42.9		9.3		28.8	49.2	K
9.5		48.1	29.5		9.3		48.3	6.5		9.5		27.9	10.9		8.7		28.9	20.1		8.2		29.4	27.7	K
9.3		56.3	0.4		7.3		56.9	13.0	Kb	9.4		41.9	21.4		9.5		58.6	3.0		9.1	57	4.6	16.9	*a*
7.2		58.3	11.2	L	9.5	33	6.8	29.7		9.3		50.3	37.6		9.4	49	13.7	50.1		9.5		23.4	1.5	
9.5	25	4.0	44.8		9.2		10.1	47.7	*aB*	9.3		51.2	16.0	*aB*	8.5		14.8	46.0		9.5		30.9	56.0	
9.5		4.3	54.3		9.4		21.7	45.9	*aB*	9.5		52.2	59.8		9.5		30.4	7.7		8.7		32.4	42.9	K
9.5		18.6	1.9		9.5		25.2	33.6		9.5		56.1	16.2	*aB*	9.4		31.5	6.0	*aB*	8.7		52.1	43.9	K
9.5		31.4	48.0		9.3		30.2	8.6		9.5	42	6.4	4.7		8.0		32.1	52.4	B	9.4	58	33.0	5.3	
9.5		31.9	59.6		9.0		36.5	55.5		7.6		9.4	55.0	L	9.4		45.3	23.3		9.3		42.4	23.6	
8.0		36.4	36.3	B	8.8	34	16.4	15.5		9.3		36.8	15.5		9.3		47.2	2.9		9.4		58.0	39.3	
9.4		37.1	38.8		9.4		20.4	52.7	*aB*	9.0		36.8	47.3		9.1		48.2	33.8	*a*	9.1	59	7.7	5.0	B
9.0		50.6	6.4		9.5		21.1	4.9		8.0		52.7	40.2	L	9.5		51.0	10.5	*aB*	9.0		15.0	33.6	
9.5	26	0.2	35.7		9.5		49.9	38.3		9.0		57.8	14.1	B	9.5		52.9	31.9		9.5		24.2	58.4	
9.5		4.0	1.9	*aB*	9.2		54.3	9.5		9.5		59.0	40.5		9.0	50	3.0	32.5		8.3		34.8	8.6	K
7.7		11.1	28.1	K	9.1	35	16.6	45.7	Kb	9.4	43	0.0	18.8		9.5		11.5	57.0		7.8		35.2	10.1	K
7.8		28.2	54.9	K	8.7		24.6	49.2	K	8.6		0.4	29.2	L	8.5		13.8	8.3		9.3		53.5	42.2	
8.1		44.4	31.3	K	9.5		39.7	6.1		9.3		3.8	56.9	*aB*	9.5		17.9	50.8		9.5	0	1.0	6.6	
7.5		45.8	36.6	K	9.5	36	6.4	34.2		9.5		4.5	44.7		9.5		22.7	0.5		9.0		3.0	34.1	
9.4		51.9	42.4		8.8		8.3	14.4	K	9.5		7.1	44.0		9.5		31.6	15.0		9.5		8.2	6.6	*aB*
4.8	27	0.5	4.3	L	9.2		16.0	51.0		7.0		15.3	32.4	B	9.0		47.6	46.2		9.5		41.4	11.1	
7.0		10.5	28.7	K	9.4		17.0	55.8		9.2		15.8	30.5	*aB*	9.3		50.2	7.1		9.5		47.5	1.2	
9.2		12.7	5.4	*B*	9.2		38.8	36.3		9.4		25.8	43.2		9.1		59.8	31.7	*a*	8.9		53.9	12.5	K
9.4		29.0	37.4	*aB*	9.5		57.3	35.9		9.4		32.9	27.7	*a*	9.4	51	27.3	47.3		9.0		57.0	42.8	
9.5		32.6	8.2		9.5	37	9.6	52.4		9.3		53.0	43.9		7.6		31.1	32.1	L	9.5		58.8	13.7	
9.5		43.1	35.9		7.8		13.3	15.3	L	9.4		54.9	7.2	*aB*	8.9		33.4	8.4	K	9.0	1	3.2	12.6	
9.2		49.3	11.4	Kb	9.5		23.2	5.6		9.4	44	7.7	58.0		9.5		37.7	10.2		9.5		4.7	51.4	
9.4		51.6	43.9		9.5		23.6	41.8		9.4		16.8	10.0		9.5		40.8	4.1		9.5		6.6	54.7	
9.2		56.7	37.9		8.1		25.7	37.0	B	8.0		18.9	2.1	K	9.5		51.3	14.8		9.5		13.6	15.0	
9.5		57.0	41.5		9.4		36.0	22.5	*aB*	9.5		22.5	52.0		9.2	52	2.9	41.1		9.5		25.0	6.3	
9.5	28	3.7	44.2		9.4	38	3.0	8.8	B	8.5		23.5	25.0	B	9.2		7.6	53.7	*Rb*	9.3	2	2.2	45.1	*aB*
9.4		6.8	45.2		9.4		4.4	18.4	*aB*	9.1		33.6	7.9	K	9.5		17.2	36.5		9.5		5.9	1.7	
9.2		21.4	54.6	K	8.8		14.1	33.3		9.0		39.9	17.6		9.5		18.7	57.4		9.0		7.7	58.7	K
9.5		36.3	36.6	*aB*	9.5		15.4	17.4		7.7		45.9	43.4	K	9.5		23.3	36.1		9.5		9.7	46.6	
9.5		37.6	53.0	*aB*	9.5		15.5	9.8		9.5	45	5.0	50.5		9.5		38.7	58.7		9.3		20.1	10.7	*R*
9.3	29	3.9	49.4	K	8.1		21.1	33.5	L	7.5		5.8	5.0	K	9.5		55.2	41.2		9.5		29.0	38.0	
9.3		15.5	24.5		9.4		30.2	0.7		9.5		6.6	46.6		8.6		59.1	1.0	K	9.5		57.7	26.6	
9.5		16.1	28.4		9.5		32.3	42.5		8.5		8.3	40.9	K	7.8	53	4.9	22.8	K	9.4	3	40.1	57.1	
9.2		21.4	6.5	*aB*	6.0		37.4	15.5	K	9.2		39.9	57.6	*a*	8.8		9.1	8.8		9.5		42.5	5.5	*R*
7.8		42.9	14.1	P	9.4		38.3	56.3		9.5		40.6	50.7		8.7		9.3	14.5		9.5	4	14.8	0.9	
9.3		55.9	1.1		9.5		53.0	9.2		9.3		46.7	0.6	*aB*	8.8		20.9	42.5		9.5		19.0	58.3	
8.9		57.3	39.0		9.5	39	0.9	51.7		9.5		53.3	49.4		9.2		49.6	21.2		9.3		21.2	12.3	
9.4	30	5.4	7.2		9.0		22.8	0.3	K	9.4	46	0.1	0.1		7.6		49.8	36.3	L	9.4		29.7	57.6	*aB*
9.1		13.9	12.5	*a*	9.5		22.8	1.5	*a*	8.0		9.1	41.3	K	8.4		51.7	0.9	*Kb*	9.2		45.6	6.1	*aB*
9.1		27.6	42.2	*a*	9.1		26.3	44.5	*a*	8.8		11.6	48.0	K	9.5		53.1	8.5		9.2		56.3	13.3	*aB*
9.0		31.9	17.1		9.5		28.6	3.0		9.4		15.0	16.5	*aB*	9.4		54.5	37.1		9.5		56.7	33.7	*aB*
9.4		49.6	49.2	B	8.8		32.7	20.6		9.0		18.8	58.7		9.5		57.1	11.2		7.2		58.1	15.3	K
9.3		51.8	22.4	*aB*	9.3		35.3	42.2		9.5		19.7	1.1		9.5	54	6.1	6.2		9.5	5	17.2	50.8	
9.2		53.4	44.3		8.7		36.9	10.2	K	9.5		24.0	21.8	*aB*	9.5		6.2	49.4		9.5		22.5	35.5	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*29.09*	*1.24*		*10pr.*		*29.11*	*1.36*		*10pr.*		*29.13*	*1.45*		*10pr.*		*29.16*	*1.54*		*10pr.*		*29.20*	*1.67*	

4297ᵐ			
9.5	49	17.2	24.5

4401—4460

	20ᵐ	+7°	
m	′ ″	′	
9.3	5 43.9	23.0	
9.3	6 4.4	53.6	
9.5	18.0	55.6	
9.5	27.4	2.5	αB
9.0	34.4	52.4	Kb
9.4	53.1	38.3	
9.4	7 2.1	40.9	
9.5	6.1	14.4	
8.4	11.2	1.3	
8.4	12.6	36.9	L
9.5	22.5	37.9	α
9.4	48.3	47.5	
9.5	56.6	14.5	
9.4	8 2.5	4.2	
*7.3	32.8	22.2	L
9.2	36.9	32.7	
9.5	41.8	35.6	
9.2	46.7	51.6	b
9.2	47.5	14.7	
8.9	48.9	19.0	
9.0	49.0	2.4	
8.7	49.5	13.6	L
9.3	51.6	16.0	
9.3	9 10.2	59.5	
9.5	38.4	40.3	
9.5	48.5	5.0	
9.5	50.3	14.7	
9.0	53.9	31.2	
9.3	10 10.5	9.2	
9.1	23.0	44.5	α
9.4	39.2	39.0	αB
9.4	39.3	21.4	
8.3	40.6	27.7	K
9.4	11 21.7	43.9	αB
9.1	25.3	22.5	α
9.2	39.5	50.9	
9.5	41.0	47.7	
9.3	12 17.5	16.8	
9.4	27.3	6.6	αB
8.8	27.6	49.8	K
7.5	13 21.6	9.9	Kb
9.2	26.1	40.8	
8.8	40.7	22.8	
9.5	44.8	2.3	
9.5	14 4.0	30.4	
9.5	17.5	29.8	αB
9.4	15 0.7	46.8	
8.4	29.3	17.8	K
9.1	41.4	24.4	α
8.1	47.3	27.0	B
9.2	51.0	55.9	
9.3	16 4.2	21.4	αB
9.5	4.7	51.2	B
9.0	32.0	11.3	K
9.2	47.3	18.3	
9.5	17 1.5	39.4	
8.2	10.8	27.2	Kb
9.5	24.1	52.4	
9.5	50.1	44.8	αB
9.5	55.6	44.3	
10pr.	+ 29.24	+ 1.80	

4414ᵐ

9.5	8 3.0	38.2	

4461—4520

	20ᵐ	+7°	
m	′ ″	′	
8.9	17 59.0	49.6	B
7.5	59.4	0.9	L
8.8	18 0.8	14.7	K
8.5	0.8	19.0	K
9.3	8.3	32.4	
9.1	11.5	23.5	α
7.5	20.1	24.3	K
9.5	19 26.1	51.1	
9.5	42.0	29.0	
9.5	43.0	39.8	
9.4	45.0	38.8	αB
9.3	56 2	18.5	αB
9.0	57.3	23.9	K
9.5	20 24.0	14.2	
9.2	26.7	22.7	
9.2	54.9	21.1	
6.5	21 3.8	57.6	L
9.3	20.0	16.8	
7.8	31.6	46.8	L
9.5	22 17.0	48.8	
9.5	23 1.0	18.7	
9.5	17.7	13.3	
9.0	40.3	13.8	
9.4	41.7	19.6	
9.4	24 5.3	21.7	
9.5	6.5	17.3	
9.3	12.8	51.5	
*9.5	27.2	5.9	
*9.4	40.3	35.9	
8.5	25 3.3	25.5	L
9.0	48.0	47.0	
9.5	52.8	5.3	
9.0	26 13.8	56.2	
9.4	21.5	26.6	
9.1	47.3	41.8	αB
9.5	27 19.0	33.8	
8.8	55.2	7.8	K
9.3	28 3.3	28.6	
9.3	18.0	42.7	
9.3	24.0	41.5	
9.3	28.7	2.9	αB
9.3	49.0	47.1	
9.4	29 18.7	54.5	αB
8.5	33.3	50.6	Kb
9.2	30 50.0	38.0	b
9.5	31 2.1	1.5	αB
9.5	3.8	35.3	
9.5	4.5	5.3	αB
9.3	34.5	36.8	
9.5	35.0	20.1	
9.2	41.2	33.1	
8.5	32 3.7	17.5	
9.5	21.2	46.1	αB
9.3	30.6	49.7	B
9.2	36.8	2.5	K
9.1	43.3	30.4	αB
9.5	45.0	7.2	
9.1	45.0	47.9	K
7.7	57.6	55.1	K
9.1	33 13.1	9.9	α
10pr.	+ 29.30	+ 1.98	

4488ᵐ

9.6	24 37.7	59.7	B

4521—4580

	20ᵐ	+7°	
m	′ ″	′	
9.2	33 23.3	54.3	K
9.2	23.5	18.7	
9.3	35.0	31.0	α
9.5	35.5	52.1	
9.5	36.0	2.0	
9.5	37.7	15.1	
9.0	34 31.6	25.9	B
8.8	40.7	25.6	B
9.3	49.0	52.3	
9.5	52.7	15.8	
9.3	56.1	47.9	αB
9.4	35 53.9	30.2	αB
9.4	58.1	30.0	αB
9.3	36 4.3	9.5	
9.3	7.5	14.0	
8.8	38.7	29.0	
8.8	57.0	36.1	
9.5	37 11.0	42.0	
9.5	24.2	46.0	
9.0	28.3	41.1	
9.5	38 26.3	35.4	
9.0	39 10.0	51.2	
9.5	27.8	23.3	αB
8.3	43.2	2.7	L
9.5	55.3	9.5	
8.3	56.7	35.9	
9.3	40 10.3	46.2	B
9.0	18.0	28.2	
7.5	41 14.8	4.4	K
9.0	27.0	43.6	
9.0	49.3	43.6	
9.5	42 8.8	46.3	
8.9	16.2	4.4	Kb
8.7	27.4	59.3	
8.8	28.0	3.2	Kb
5.5	41.7	19.6	K
8.3	54.5	18.9	L
8.7	59.2	3.2	K
9.4	43 28.2	14.2	
9.0	36.0	2.5	
9.5	44.0	11.6	αB
9.2	57.0	41.3	b
9.1	44 26.1	15.1	K
9.3	29.0	2.7	
8.9	29.7	14.4	K
9.3	49.9	47.0	
8.0	56.0	3.4	K
8.8	45 24.1	17.6	K
9.4	55.8	50.4	
9.5	46 3.0	47.3	
8.4	4.5	47.6	
9.5	19.0	25.3	
8.5	19.2	16.4	K
9.2	21.5	31.7	K
9.5	21.6	39.2	B
9.4	59.6	35.0	αB
9.5	47 9.0	22.5	
9.5	48 1.5	23.3	
8.8	26.7	5.7	K
7.3	41.5	8.0	K
10pr.	+ 29.38	+ 2.17	

4581—4640

	20ᵐ—21ᵐ	+7°	
m	′ ″	′	
8.8	48 48.1	52.9	K
8.8	49 15.7	2.9	
9.4	22.0	19.2	
9.4	27.4	22.4	αB
9.3	50 12.9	38.6	
9.5	19.8	1.0	B
8.8	29.9	8.9	
9.4	30.2	3.0	αB
8.4	48.5	50.1	Kb
9.5	51.5	10.0	
7.2	53.0	30.4	B
9.3	53.6	33.2	
9.5	51 2.2	36.9	
9.3	10.0	57.2	
8.0	13.2	57.4	K
8.8	14.3	25.8	
8.7	16.9	23.5	B
9.0	41.5	15.6	
9.5	45.5	7.2	
9.3	52 39.1	8.0	
9.0	56.9	8.8	
9.3	53 13.8	9.0	
8.5	20.0	22.5	
8.5	33.7	39.8	L
8.5	46.7	29.4	L
9.5	58.5	13.5	
9.5	54 15.2	38.4	
9.4	28.5	4.2	
9.4	45.9	58.4	αB
9.0	48.9	14.9	K
9.5	49.2	24.6	
9.5	55 56.8	0.8	
8.8	56 5.2	21.1	K
9.5	59.6	53.4	
9.1	57 4.7	23.2	α
9.4	9.8	59.3	
8.0	25.4	11.7	K
9.0	30.4	16.0	B
9.1	50.9	14.5	K
9.5	58 1.0	29.3	
8.2	2.4	22.5	K
9.0	33.9	17.0	K
9.0	51.2	25.6	
9.4	59 12.5	12.3	αB
9.0	0 6.7	10.0	K
9.0	1 4.0	29.8	
9.5	12.0	6.5	
9.3	51.3	9.4	
9.4	52.5	7.2	
7.0	53.6	2.2	L
9.0	2 7.6	26.5	
9.5	18.7	38.4	
9.3	57.3	8.0	
9.4	3 0.7	59.7	
9.5	3.3	28.7	
9.5	9.7	8.6	
9.2	11 5	50.9	Kb
9.3	24.7	46.7	K
9.5	55.7	22.5	
9.5	4 48.3	36.3	
10pr.	+ 29.46	+ 2.31	

4641—4700

	21ᵐ	+7°	
m	′ ″	′	
9.3	5 1.7	4.1	
9.5	16.6	9.5	αB
8.3	19.4	25.8	K
9.5	20.7	31.8	
7.7	47.3	6.3	K
9.0	6 25.5	9.6	
9.5	57.7	13.1	
9.4	7 2.0	32.9	K
8.3	2.0	30.2	K
8.7	51.0	6.6	K
9.5	8 5.5	52.9	αB
9.0	7.5	58.2	L
9.0	43.3	11.0	
9.0	47.2	8.9	
9.5	9 37.6	59.5	
9.2	42.0	31.8	
9.0	10 16.7	9.6	K
8.0	20.0	38.1	L
9.5	33.7	35.0	
8.7	11 8.3	10.1	K
9.5	26.6	45.8	
9.4	32.4	57.4	
9.5	12 1.3	13.1	
9.5	50.6	27.8	
7.8	13 30.7	35.4	K
9.4	14 13.5	49.8	αB
9.4	16.5	58.2	αB
9.2	35.6	59.7	K
9.5	15 2.6	14.7	
8.8	22.0	51.2	K
8.3	25.7	10.4	Kb
9.3	27.3	27.6	
8.8	30.0	29.4	
9.0	16 30.3	18.7	K
9.4	35.8	39.0	
9.4	36.7	31.3	
9.5	59.6	17.0	
9.2	17 16.0	2.6	
9.0	16.1	23.4	
9.5	34.7	12.6	
9.2	36.1	16.4	
8.8	49.8	29.1	
9.5	51.2	36.5	
9.0	18 17.7	48.1	
9.5	41.8	7.6	
8.8	19 2.6	10.3	K
9.5	7.2	49.6	
9.0	27.5	19.0	K
8.5	29.0	14.9	K
8.7	43.1	18.7	K
9.5	20 9.8	2.4	
9.5	15.2	4.3	
8.5	35.8	46.4	K
9.4	21 7.1	50.3	
9.5	11.6	57.7	
6.5	16.8	34.3	Kb
8.8	20.8	51.4	K
9.2	30.6	5.4	R
8.5	43.1	8.2	L
9.1	22 16.3	34.5	αB
10pr.	+ 29.56	+ 2.51	

4701—4760

m	21h	+7°	
9.5	22 32.6	54.4	
9.5	42.1	9.0	
9.1	23 3.0	54.4	a
9.2	16.3	48.9	
8.8	25.5	31.8	
9.4	55.8	34.6	
9.3	57.6	17.7	aB
9.4	24 5.0	19.0	a
8.5	6.7	4.3	
9.5	22.8	46.7	
8.5	31.5	18.7	K
8.8	59.3	48.9	
9.5	25 3.6	5.1	
9.5	26 12.3	23.9	
9.5	29.0	39.5	
9.5	27 3.3	5.2	
9.5	10.9	3.7	
9.0	28 16.1	29.0	K
8.7	29 6.4	58.8	
9.0	14.5	22.5	
8.2	16.8	14.5	Kb
9.5	53.3	10.7	
9.3	30 15.2	7.5	
9.3	29.1	44.6	a
8.5	41.2	46.7	K
9.3	45.8	24.5	
8.2	31 16.6	56.0	Kb
9.0	58.0	30.6	
9.3	32 3.0	32.1	a
9.5	33 0.3	12.7	
9.5	12.5	10.7	
9.0	27.1	2.0	
8.8	34 47.7	54.9	K
8.5	35 2.2	45.4	K
9.0	21.1	45.0	K
9.0	21.6	30.1	
9.5	49.2	43.4	
9.5	52.0	55.9	
9.0	58.5	26.7	
9.5	36 1.7	53.1	aB
9.2	15.6	54.9	K
8.5	37 25.5	18.4	
9.5	49.7	59.0	
9.5	38 3.0	54.0	
7.5	37.3	20.4	K
9.5	59.8	37.0	
9.5	41 20.3	44.3	
9.0	34.1	6.3	
8.8	34.2	45.7	K
9.5	38.1	7.1	aB
9.4	58.6	46.8	
8.5	42 35.8	34.6	
9.2	56.8	40.1	
9.5	58.8	21.6	
9.5	44 3.6	28.4	
8.5	8.1	40.2	K
9.5	46.3	11.9	
9.5	50.8	32.9	
9.0	45 6.3	8.9	
9.5	36.8	6.9	
10pr.	+ 29.67	+ 2.68	

4761—4820

m	21h—22h	+7°	
9.5	45 55.1	30.1	a
9.0	46 26.1	29.4	
8.8	55.4	7.7	B
9.5	55.8	18.7	
9.3	48 22.5	27.6	a
9.4	41.5	20.1	
9.3	45.0	49.8	
9.5	49 19.1	17.5	
9.0	22.1	40.7	Kb
8.8	26.2	57.0	
9.5	50 3.8	51.6	
9.5	47.3	9.3	
9.4	51 27.8	28.6	
9.5	50.9	7.4	aB
9.5	52 5.1	46.6	
9.1	50.1	33.0	a
7.8	53 38.3	9.7	K
8.5	56.5	57.2	
5.8	58.0	33.7	K
9.4	54 30.3	10.0	
9.1	35.9	1.7	a
9.2	57.9	27.3	
9.3	55 16.7	29.3	
8.2	28.3	49.1	K
8.7	44.1	33.8	K
9.5	47.8	58.0	
8.7	57.0	19.5	K
9.3	56 29.7	25.6	
*9.5	57 18.0	4.8	
~~9.0~~	~~40.0~~	~~5.3~~	
9.3	42.0	11.4	a
9.5	58 26.5	50.4	
9.1	48.8	37.8	b
9.5	59 5.2	58.2	
9.5	51.4	32.5	
9.5	54.7	58.4	
9.5	0 2.6	7.1	
9.2	36.6	27.4	
9.2	40.6	1.6	
9.0	47.6	42.2	K
9.2	1 11.8	35.3	K
9.3	2 0.5	36.6	
9.3	12.0	34.5	
9.5	23.0	33.7	
9.3	24.4	2.2	
8.0	49.9	14.6	K
9.5	3 6.4	46.9	
9.5	12.0	57.7	
9.1	14.6	29.7	a
9.2	20.7	18.0	K
9.5	25.6	57.6	
8.9	41.9	16.9	K
9.5	52.9	57.7	
9.4	59.2	56.4	aB
9.5	4 10.7	49.0	
9.5	33.1	36.7	
9.5	46.0	6.9	
8.1	59.2	44.9	Kb
9.5	5 9.6	7.5	
9.5	30.7	19.4	
10pr.	+ 29.83	+ 2.87	

4821—4880

m	22h	+7°	
9.4	5 34.2	46.8	
9.4	42.2	48.8	B
9.1	54.7	3.2	K
8.6	6 10.9	42.7	L
9.0	31.0	12.1	K
7.9	30.1	0.1	K
9.5	36.0	47.8	
9.5	37.1	10.3	
7.5	7 16.3	15.9	K
9.5	29.7	5.4	
9.0	8 10.9	13.7	K
9.1	29.8	37.1	K
9.4	41.5	38.0	aB
7.0	46.4	50.0	Kb
9.5	9 21.3	28.2	
8.2	53.8	39.1	K
9.3	10 0.0	55.4	
8.9	9.3	27.3	L
8.7	37.2	33.6	
9.2	11 3.2	37.6	Kb
9.4	21.2	43.8	
8.0	28.4	8.7	K
9.0	34.7	52.1	
9.3	54.5	30.3	
9.5	12 0.7	38.6	
9.5	6.6	16.8	
9.0	26.1	2.4	
9.5	33.7	29.6	
9.3	33.9	52.5	
9.5	13 27.7	51.5	
9.0	36.4	33.5	
9.0	39.7	13.0	
7.0	44.2	27.0	L
8.7	55.5	57.3	K
8.2	14 6.5	53.2	K
9.5	39.5	52.2	
8.5	54.1	9.9	B
9.5	55.3	33.1	
9.5	15 17.5	0.4	
9.3	31.7	34.0	
9.5	34.0	15.2	
9.5	16 4.9	49.9	
9.5	7.9	41.3	
9.5	11.5	54.3	
9.5	41.7	31.1	
9.5	45.6	56.1	
9.5	17 5.2	56.2	
8.3	19.7	27.4	
9.4	51.7	48.3	
9.5	56.1	45.0	
9.5	59.3	41.1	
9.4	18 53.0	33.7	
8.0	19 6.1	10.0	K
9.3	10.5	33.5	
9.3	14.2	37.1	
9.2	20 23.2	29.0	b
9.0	38.2	38.0	
9.5	21 18.8	20.5	
9.5	19.8	16.5	
8.2	22 16.2	16.3	K
10pr.	+ 29.94	+ 2.98	

4881—4940

m	22h	+7°	
9.5	22 43.2	29.2	
9.4	23 30.2	53.5	
7.9	43.0	41.0	Lb
9.4	24 4.1	29.6	
9.5	31.2	0.0	
7.9	32.6	3.0	K
9.5	25 14.5	12.0	
9.2	19.3	32.4	b
9.5	26 24.7	56.6	
9.4	39.0	11.2	
9.4	27 32.9	20.1	
9.4	48.0	51.0	
9.5	28 10.9	16.3	
9.5	40.6	57.7	
8.7	54.0	31.2	Kb
9.3	55.3	20.5	aB
9.5	29 4.6	53.0	K
7.6	37.6	2.0	
9.3	45.5	43.5	
9.3	30 36.9	15.3	
9.3	31 4.0	2.4	
9.5	19.1	53.7	
9.5	29.6	54.0	
8.3	36.2	37.3	L
9.0	44.5	38.0	L
9.5	32 1.3	56.0	
8.8	8.0	8.2	K
9.1	20.9	58.5	ab
9.5	34 0.5	46.8	
9.2	10.9	26.7	K
8.9	31.9	7.3	K
9.0	39.1	49.3	K
7.8	54.4	19.2	K
9.5	35 19.7	59.8	
8.7	39.6	1.0	K
9.5	36 33.5	13.2	K
8.8	50.9	17.0	K
9.3	56.5	33.3	
9.0	37 2.7	47.6	
9.2	24.2	40.8	K
9.0	38 5.4	11.8	K
9.4	22.0	51.3	
9.5	37.7	58.5	
8.7	39 14.9	6.2	K
9.4	22.4	41.9	Kb
9.5	27.3	33.8	
9.2	35.7	12.9	R
9.3	40 48.0	14.8	
9.1	41 0.2	22.5	a
9.0	16.6	57.0	K
7.8	23.1	5.1	K
8.7	40.7	46.6	K
9.4	42 34.6	34.7	
9.5	47.3	35.8	
9.3	43 15.9	40.5	
9.4	45 24.2	40.9	
9.4	49.2	31.4	
9.4	55.0	46.6	
8.9	46 10.9	40.0	
8.9	27.0	9.9	
10pr.	+ 30.08	+ 3.11	

4941—5000

m	22h—23h	+7°	
9.5	46 27.9	36.6	
9.4	36.6	46.1	
9.3	47 0.7	55.6	
9.4	1.0	40.3	
9.1	9.4	37.0	ab
9.5	43.5	40.7	
9.3	48 37.3	55.2	
9.4	49 21.2	33.9	Kb
9.0	27.8	46.1	K
9.5	50 28.3	53.7	
9.1	47.4	48.1	K
9.5	51 58.5	33.9	
9.5	52 0.5	19.9	
9.5	18.9	29.7	
9.5	37.1	39.2	
9.4	44.4	10.1	
9.1	53 12.7	6.9	K
8.4	18.0	58.7	K
8.9	21.7	11.5	K
8.5	55.2	13.4	K
8.5	54 34.7	52.9	K
9.3	43.2	54.6	K
8.6	55 54.7	52.8	
9.5	56 4.7	0.6	
9.5	38.5	28.2	
9.5	54.2	1.0	
8.8	57 4.7	24.5	
9.4	11.6	11.1	
9.2	12.3	24.2	a
9.5	24.8	47.5	
8.5	35.7	6.4	
9.5	40.0	39.4	
9.3	58 18.5	41.1	
9.4	59 14.3	40.4	
9.0	32.3	53.8	K
9.3	52.1	38.0	
9.4	0 31.7	5.6	
9.3	43.7	49.0	
9.0	1 13.9	4.8	K
8.8	42.0	8.6	Kb
5.3	2 12.7	53.7	K
9.5	17.5	55.6	?
9.4	22.1	16.0	
9.5	37.1	58.1	
9.5	58.8	33.5	
9.5	3 5.9	18.5	?
9.4	6.9	54.8	
9.4	11.0	45.6	
9.5	19.8	29.4	
9.4	4 0.6	33.5	
6.0	25.0	56.1	K
9.5	53.7	19.7	
9.5	6 5.5	55.8	
9.2	7.1	36.1	K
9.5	28.7	7.6	K
8.7	44.4	20.6	K
9.0	54.0	42.7	
9.2	8 14.3	38.9	
9.4	45.2	16.5	Kb
9.5	49.4	20.7	
10pr.	+ 30.24	+ 3.22	

4789a
9.5 | 57 21 | 15.7 |

5001—5026

m	23ʰ	+7°	
	′ ″	′	
8.5	9 6.3	14.6	K
8.9	10 9.5	24.9	K
9.1	48.0	46.2	*ab*
8.1	57.2	2.9	K
9.5	11 0.5	36.0	
9.3	45.5	25.6	*aB*
8.8	47.4	27.0	
9.3	12 14.5	30.6	
7.3	28.2	11.7	K
9.5	32.1	19.1	
9.3	43.1	15.4	K
9.4	57.9	1.3	
9.5	13 4.2	29.9	
9.5	14 42.8	39.7	
9.4	15 0.2	53.1	
9.1	10.0	26.0	K
9.1	25.6	53.5	*ab*
9.0	31.1	16.7	K
9.2	55.0	16.6	K
9.5	58.2	56.5	
9.3	16 52.7	34.5	
8.9	57.8	18.9	K*b*
9.2	17 21.5	1.7	K
9.5	22.6	53.6	
8.7	28.6	4.8	K
9.3	45.0	1.4	K
10pr.	*30.37*	*3.27*	

5027—5052

m	23ʰ	+7°	
	′ ″	′	
9.5	17 47.0	28.9	
9.2	18 2.0	46.5	*R*
9.4	25.4	23.3	
7.1	19 5.7	51.8	K*b*
9.5	29.1	13.6	
7.7	57.4	16.2	K
7.9	20 42.6	50.0	K
9.5	21 42.8	43.6	
9.5	22 14.4	11.0	
9.5	25.2	25.6	*R*
9.2	32.1	0.8	K
9.5	36.8	38.2	
9.5	46.8	12.2	
8.1	23 32.4	11.9	K
9.5	53.7	9.4	
9.5	24 13.0	50.7	
9.4	36.9	40.6	
9.4	25 6.7	59.6	
8.7	17.1	19.8	K
9.4	40.1	59.3	
9.5	55.5	51.4	K
9.5	26 4.1	11.7	
9.4	20.4	10.3	K
9.0	33.2	13.2	K
9.5	41.8	35.0	
9.3	46.5	2.1	K
10pr.	*30.43*	*3.30*	

5053—5078

m	23ʰ	+7°	
	′ ″	′	
9.0	26 47.0	10.7	K
~~9.2~~	~~54.6~~	~~58.8~~	
8.5	56.4	54.3	K
8.8	27 2.4	7.0	
9.1	3.4	30.8	
9.5	11.4	25.8	
6.5	28 4.6	43.4	K*b*
7.2	13.7	35.1	K
9.5	29 17.8	46.7	
9.5	21.1	14.7	
9.5	30 4.1	52.4	
9.1	59.1	51.1	*b*
9.5	31 16.1	51.3	
8.5	29.1	30.6	K
9.5	35.0	2.6	
9.3	42.5	31.1	K
9.5	53.7	20.2	
8.7	33 7.8	2.1	K
8.3	9.7	13.7	L
8.3	17.4	5.1	K
8.3	19.1	8.6	K
9.5	25.9	37.3	
8.3	26.9	32.3	K
9.1	30.3	11.0	K
9.5	32.3	15.1	
8.8	34 18.6	24.1	K
10pr.	*30.50*	*3.31*	

5079—5104

m	23ʰ	+7°	
	′ ″	′	
9.4	36 30.0	7.6	
9.0	54.2	42.1	K
8.2	37 7.4	42.4	K*b*
8.2	48.2	25.1	K
9.5	39 25.2	26.2	
8.8	40 28.7	12.0	
6.8	48.4	26.9	L
8.2	54.9	22.9	L
9.5	41 32.5	21.7	
8.9	42 15.0	49.5	K
9.5	33.1	7.0	*B*
9.5	41.7	47.9	
9.5	43 5.4	18.3	*B*
9.0	51.4	49.5	
9.5	44 11.8	53.6	
8.5	45 17.2	54.7	K
9.1	54.1	58.2	*a*
8.5	46 12.5	42.2	K
8.1	47 33.9	35.2	K
8.8	34.4	45.2	K
9.3	38.8	40.0	
8.8	48 9.8	34.6	K
7.0	12.8	25.0	K
9.0	13.2	57.3	
9.5	41.7	59.6	?
9.5	49 40.4	36.6	
10pr.	*30.60*	*3.33*	

5105—5129

m	23ʰ	+7°	
	′ ″	′	
8.6	50 18.2	36.9	K
9.5	28.5	20.0	B
8.5	59.5	16.5	K
9.4	51 33.4	19.5	
9.5	39.8	52.2	
9.5	55.1	42.5	*aB*
9.0	52 25.4	27.4	
9.5	31.0	55.8	
7.5	50.4	12.3	K
8.9	53 0.7	41.5	K
8.6	7.1	39.8	K
9.5	15.4	47.6	
9.2	53.6	35.0	
9.0	54 27.8	43.6	
9.5	43.0	57.3	
8.5	55 3.5	35.1	B
6.3	5.2	40.8	L
9.5	13.8	24.8	
8.5	38.3	27.7	L
9.5	56 12.9	28.1	
9.5	52.0	51.8	
9.5	57 33.6	18.2	
9.5	34.3	3.0	
8.2	53.9	58.7	K
9.4	56.4	36.1	
10pr.	*30.67*	*3.34*	

Zone +8°

1—20

m	0ʰ	+8°	
	′ ″	′	
9.4	0 26.9	21.2	
9.5	1 14.3	27.0	
9.4	21.2	12.4	
9.4	30.0	3.3	
8.9	46.7	48.6	*B*
9.5	2 8.1	24.5	*aB*
9.5	9.5	11.9	
9.1	32.2	23.6	*aBb*
9.4	34.8	18.3	
9.1	3 33.7	1.2	*a*
9.4	43.8	11.3	
9.1	51.9	17.2	K
7.7	4 21.3	20.3	K
9.4	5 11.8	21.5	
9.5	12.2	43.1	
9.4	49.4	12.2	
7.9	52.3	7.0	K*b*
9.5	6 12.2	54.0	
6.0	7 31.7	0.9	K
9.0	56.2	56.7	K
10pr.	*30.75*	*3.34*	

21—40

m	0ʰ	+8°	
	′ ″	′	
9.5	8 27.0	0.4	*aB*
9.0	44.0	15.3	
9.4	9 25.9	58.5	
7.0	56.4	4.1	L
8.8	10 3.7	23.9	
9.5	12.6	15.4	
9.3	21.0	26.7	
8.6	32.1	42.7	
9.2	11 7.9	56.5	
9.0	11.8	15.5	K*b*
8.3	54.6	14.0	K
8.9	12 44.9	43.3	K
9.5	13 37.7	36.3	
8.9	59.0	12.1	K
9.2	14 15.8	10.2	K
9.4	42.0	42.0	
9.4	15 26.6	1.0	*aB*
9.5	35.2	55.6	
8.6	50.9	32.8	K
9.5	16 13.5	55.4	
10pr.	*30.82*	*3.33*	

41—60

m	0ʰ	+8°	
	′ ″	′	
8.7	16 16.3	49.6	K
9.0	26.4	3.8	
8.9	27.0	13.1	
9.4	17 48.5	20.4	
8.8	51.2	15.4	K*b*
9.5	18 13.7	30.7	
9.3	30.8	33.2	R
9.2	36.3	5.7	
9.4	36.9	58.1	
9.0	19 15.7	20.5	
8.0	24.0	31.1	K*b*
9.5	39.4	39.7	
8.6	43.1	21.2	K
9.5	20 8.5	25.9	
9.2	13.2	35.1	
9.2	14.1	41.7	
9.5	25.0	13.3	
8.8	21 38.8	51.0	K
9.3	54.0	34.8	
9.3	22 13.0	14.6	
10pr.	*30.88*	*3.33*	

61—80

m	0ʰ	+8°	
	′ ″	′	
8.0	22 21.7	53.9	L
8.4	25.1	0.0	
7.9	23 35.2	31.0	K
7.5	24 8.2	21.3	K
9.5	13.1	32.1	
9.4	49.4	32.2	
9.4	57.8	59.6	
9.5	25 24.6	44.6	
8.9	37.5	6.8	K
9.5	46.3	4.9	*a*
9.1	55.4	21.0	*a*
8.9	58.5	58.1	K*b*
9.5	26 13.8	59.1	
8.6	27 0.6	16.6	K
9.4	1.0	23.4	
9.5	50.0	54.0	
9.5	28 22.9	55.0	
9.5	38.6	5.5	
9.5	53.0	53.2	
7.9	54.9	5.0	K
10pr.	*30.94*	*3.32*	

81—100

m	0ʰ	+8°	
	′ ″	′	
8.9	29 52.0	12.3	K
8.8	30 7.0	50.6	B
9.5	30.3	27.1	
8.8	35.8	24.4	K
9.5	56.7	37.0	
8.8	31 18.2	56.8	K
9.5	34.0	40.0	
9.5	40.6	15.1	*aB*
9.2	50.6	20.8	K
9.5	32 23.2	37.1	
9.5	53.7	46.7	
9.5	33 15.9	7.0	
8.7	22.0	34.7	K
7.0	42.9	33.5	K
9.5	50.0	6.3	
9.4	54.2	6.6	
8.9	34 0.2	49.9	R
9.5	17.3	42.4	*aB*
8.8	25.0	23.2	K
9.3	35 5.0	3.6	
10pr.	*31.00*	*3.30*	

9ᵉ
9.3 | 3 27.7 | 3.2 |

+8°

101—160

m	0ʰ	+8°	
8.5	35 30.8	13.1	K
9.3	36 30.7	45.5	
9.5	37 20.0	14.2	
9.3	39 24.9	59.9	αB
9.5	40.9	55.9	αB
9.5	54.0	3.9	
9.3	59.9	59.7	
9.4	40 26.6	31.0	
9.4	35.0	51.2	
7.7	39.3	25.7	K
9.3	41 11.2	48.9	
9.4	30.5	33.8	
9.3	42 26.8	27.9	
9.5	35.8	57.9	
9.3	53.4	22.5	?
9.0	43 4.4	47.1	
8.7	29.6	26.2	
9.5	44 29.5	31.8	
9.4	49.9	50.1	αB
9.5	45 14.8	3.0	
9.3	36.7	6.4	a
9.5	36.7	54.9	
9.0	56.4	31.0	K
9.5	46 7.8	59.4	
9.5	22.2	44.0	
7.8	47 13.1	38.7	K
9.4	18.4	10.7	
9.4	48 29.4	22.5	
9.0	38.5	21.5	K
8.0	49 1.0	26.5	Kb
9.4	15.4	58.0	
9.5	21.3	54.6	
9.0	38.9	11.1	
8.7	39.6	44.7	K
9.5	43.7	51.3	αB
8.4	56.1	44.1	K
9.1	50 29.0	29.6	K
9.5	51 19.2	38.6	
9.4	31.8	19.7	
9.5	36.0	10.0	
8.8	47.1	34.2	K
9.5	48.0	9.2	
9.1	52 22.9	3.4	a
9.5	25.4	44.5	
9.0	25.5	26.9	
9.1	53 0.0	18.1	a
8.2	8.2	42.3	L
9.4	13.2	52.0	
9.3	22.6	48.0	
9.5	28.8	9.3	αB
9.4	37.0	52.8	
9.3	56.9	6.9	
8.0	54 9.0	57.3	K
9.3	11.6	54.6	B
9.0	14.0	49.0	K
9.5	24.1	28.9	
9.5	26.0	10.3	αB
7.4	58.1	2.1	L
7.2	55 9.3	20.7	K
9.4	42.4	12.2	
	+	+	
10pr.	31.15	3.26	

161—220

m	0ʰ—1ʰ	+8°	
8.8	55 52.7	0.4	
9.5	56.3	51.5	
8.9	56 7.0	15.2	
9.3	22.8	37.1	
9.0	30.2	13.4	
8.2	57 4.4	48.9	K
9.5	22.9	3.9	
9.5	26.8	44.4	
9.3	35.7	53.5	
9.4	47.8	57.2	
9.3	58 19.4	33.8	
9.3	34.2	57.1	
7.5	59 8.3	5.7	L
9.4	37.8	49.3	
9.5	38.0	33.1	
8.8	0 52.0	36.5	K
7.5	1 22.0	58.1	K
9.5	28.7	45.5	
9.3	44.5	15.7	
9.5	2 19.4	51.5	
9.5	33.0	18.9	
9.4	42.1	44.7	αB
7.2	3 18.7	46.4	Lb
9.3	4 8.6	19.1	αB
9.2	38.1	11.2	K
9.5	5 14.0	51.0	
8.2	6 6.5	12.5	K
9.2	25.4	51.9	
9.5	47.5	47.1	αB
9.0	7 6.4	1.5	
9.3	6.5	44.6	αB
7.7	15.8	58.2	K
9.2	29.9	1.0	a
9.5	41.1	39.6	
9.5	58.2	30.2	
9.5	59.5	24.4	
8.5	8 3.8	0.1	K
9.5	12.3	16.0	
9.1	15.5	54.3	K
8.5	53.2	52.2	K
9.5	9 15.9	48.2	
9.3	36.4	7.7	a
var	10 0.0	10.0	B
9.5	31.4	16.4	
9.5	39.0	10.3	
9.5	11 38.6	23.7	a
9.4	57.5	29.0	
9.0	12 45.1	52.2	K
8.5	48.7	45.4	K
9.5	53.6	40.8	
*8.5	56.5	24.2	R
*9.0	13 21.4	7.0	
9.5	25.5	28.1	
9.1	31.3	54.7	Kb
9.5	57.4	55.3	?
8.2	14 8.1	57.2	K
9.2	26.1	53.4	K
7.9	15 30.0	25.2	Kb
8.8	37.5	26.0	K
9.5	58.7	18.7	
	+	+	
10pr.	31.30	3.20	

221—280

m	1ʰ	+8°	
9.4	16 3.8	22.2	B
9.3	4.9	36.7	αB
9.2	6.5	21.6	αB
9.0	12.5	35.4	K
9.3	50.4	53.0	αB
9.3	56.0	41.9	B
9.2	17 49.2	12.5	Kb
9.1	49.8	56.4	a
9.2	56.3	32.9	K
9.5	18 7.0	37.5	?
8.9	11.4	49.0	
8.8	13.9	36.8	K
*9.5	22.2	57.0	
*9.0	52.0	47.2	K
9.1	20 9.6	2.7	K
9.2	20.9	15.3	b
9.5	43.6	28.6	
8.3	21 33.5	54.5	L
9.5	23 35.8	4.6	
9.2	49.4	5.7	b
9.5	24 1.5	1.8	
9.2	32.6	29.3	αBb
9.1	38.8	28.9	αB
9.5	55.0	24.6	
9.5	25 14.4	6.9	
8.6	26 20.3	14.6	
8.8	24.9	16.0	
9.5	27 0.4	25.1	
9.5	2.0	6.4	
9.4	40.4	30.7	αB
9.5	28 22.7	13.1	
8.8	26.3	40.6	
9.0	29 15.0	6.6	
9.5	43.7	8.0	
8.6	46.5	51.0	
9.2	31 3.1	6.7	
9.5	32 50.7	33.0	
6.7	57.4	0.9	K
9.0	33 6.0	46.8	
8.9	23.9	1.3	K
8.0	47.4	19.8	K
9.3	34 1.1	45.5	
9.5	25.0	1.5	
8.8	54.2	43.7	K
9.3	58.7	46.5	
8.7	36 6.3	50.4	K
8.6	20.9	46.8	K
8.5	26.1	8.5	
8.2	35.2	44.8	K
8.8	37.0	51.3	
9.3	37 0.5	44.9	αB
9.5	25.7	3.6	
4.5	44.8	25.7	K
9.3	38 21.7	41.3	
9.5	39 16.8	13.0	
9.2	32.8	2.3	K
9.3	40 7.7	39.2	
9.3	41 18.7	57.0	
8.3	32.1	33.0	Kb
9.1	34.2	57.9	a
	+	+	
10pr.	31.46	3.10	

281—340

m	1ʰ—2ʰ	+8°	
9.5	41 40.4	22.8	
8.8	43 44.1	4.1	
9.5	45.8	50.0	
8.2	51.7	34.3	B
9.5	44 1.4	12.5	
9.3	30.6	58.5	K
8.7	37.0	5.9	B
8.7	57.5	52.1	K
9.2	45 48.2	31.9	K
8.9	46 29.2	52.7	R
8.7	42.0	49.8	L
7.0	43.0	4.0	Bb
9.2	47 1.7	8.8	αB
8.9	9.7	28.7	B
9.5	13.3	1.2	
8.7	17.9	4.0	K
9.4	20.5	31.0	
9.4	22.3	5.7	B
9.5	52.5	56.7	
9.5	48 9.0	59.5	
9.4	40.2	53.1	
8.7	49 5.1	45.0	Kb
9.0	50 44.2	31.8	K
9.2	51 29.0	10.7	b
9.1	30.1	54.0	αB
9.5	52 1.2	45.7	
9.0	40.1	40.8	K
8.5	53 5.7	30.1	Kb
9.5	16.5	53.3	
9.3	31.7	49.2	R
9.3	54 18.5	16.9	
9.1	22.2	24.5	a
9.5	26.1	37.0	
8.5	39.0	55.0	
9.0	53.7	38.9	
7.7	56.9	23.5	Kb
9.5	55 37.2	27.3	
9.5	56 1.0	18.6	
9.5	7.0	24.5	
9.0	27.5	27.3	K
9.4	57 30.5	8.4	
9.5	59.2	8.9	
9.1	58 30.1	45.3	K
9.3	52.4	0.2	
9.5	57.6	59.5	
9.5	59 14.7	35.6	
9.5	54.2	32.1	
8.1	57.5	8.9	K
9.2	0 23.6	49.9	b
7.8	38.9	9.6	B
9.5	44.7	37.7	
9.5	1 41.0	59.7	
8.9	2 32.2	19.3	Kb
9.2	44.9	10.3	
9.5	3 34.2	57.5	
9.1	38.3	27.0	ab
9.2	41.8	54.1	
9.5	46.8	2.7	
8.8	4 1.7	53.1	K
*9.0	12.2	13.0	
	+	+	
10pr.	31.67	2.93	

341—400

m	2ʰ	+8°	
8.8	4 12.9	1.0	K
8.9	17.7	13.1	K
8.6	39.9	6.2	K
9.0	5 7.1	46.7	
4.6	19.3	9.8	K
9.4	35.1	36.2	
9.3	39.7	34.2	
9.5	53.2	9.9	
9.3	7 11.3	14.8	
9.5	34.4	3.5	
9.3	53.7	40.0	
9.5	8 21.2	21.1	
9.2	30.6	38.6	b
9.5	9 38.8	12.5	
9.5	47.3	17.4	
9.1	10 29.7	19.2	ab
9.3	55.8	44.2	
9.5	57.5	2.3	
9.5	11 36.5	5.3	
9.5	42.3	31.4	
9.5	52.7	33.4	
9.5	12 51.8	48.8	
9.5	13 26.6	32.7	
7.8	40.6	12.5	K
9.1	43.6	58.9	a
9.0	14 11.2	55.0	
9.5	15 6.7	9.8	
9.1	16 32.8	37.4	b
9.5	47.7	48.7	
9.5	58.5	2.5	
9.5	17 10.0	57.1	
8.5	55.6	3.9	K
9.3	18 31.2	49.5	
9.1	20 1.9	12.0	K
9.5	3.7	37.9	
9.5	12.2	27.8	
9.5	12.3	39.3	
9.5	15.8	1.0	
9.3	26.6	6.7	
8.9	56.3	0.3	
9.0	21 0.0	6.6	
8.5	10.8	7.1	
9.5	27.7	11.8	
9.5	32.5	3.7	
6.3	48.7	55.4	K
8.0	51.8	20.9	K
8.5	22 28.8	13.9	K
9.5	37.7	9.4	
9.5	23 9.8	48.4	
9.3	24 23.7	23.7	
9.5	30.8	15.3	
8.9	47.9	55.9	
9.3	25 31.3	59.5	
9.0	35.1	0.2	
9.5	48.8	48.6	
7.8	26 29.7	20.9	K
9.3	52.2	13.2	
9.5	28 4.3	12.5	
8.8	46.7	30.2	K
9.3	29 14.8	34.8	
	+	+	
10pr.	31.85	2.76	

211a			
9.5	13	1.0	45.5

233a			
9.5	18	28.0	41.0

339a				
9.7	4	11.7	0.1	B

401—460

m	2ᵃ ′ ″	+8° ′	
9.4	29 23.0	44.2	
8.8	38.6	55.9	K
8.9	30 1.3	19.1	K
9.4	32.6	27.4	
9.5	37.9	0.2	
9.3	31 13.0	16.5	B
7.9	16.0	17.4	K
9.3	16.9	56.4	B
9.4	35.3	51.6	aB
8.9	32 48.6	52.1	
9.5	34 19.7	16.8	
9.5	47.5	29.9	
9.5	48.8	7.0	
9.1	35 32.7	55.6	ab
9.5	53.9	59.8	
8.6	36 39.8	37.2	K
9.3	37 36.5	22.4	
9.5	38 35.3	22.0	
8.8	37.9	47.8	K
9.3	59.3	12.5	
9.3	39 6.6	33.7	aB
9.0	14.6	9.0	
9.5	15.2	30.9	
7.5	37.9	42.3	Kb
8.8	40 7.0	19.1	K
8.8	13.0	16.3	K
9.5	19.6	36.0	
9.3	20.0	16.0	a
9.4	44.3	36.4	
8.3	49.0	19.0	K
9.3	41 24.3	48.9	
9.0	31.0	54.4	
7.9	42 7.6	19.8	K
9.2	43.6	6.7	
9.5	43 9.5	57.1	
9.5	11.2	4.0	
9.1	32.6	46.8	ab
9.3	37.3	56.8	
9.5	44 1.3	40.2	
9.3	6.0	17.4	
8.3	45 7.0	0.7	K
9.0	7.6	33.6	
6.8	59.6	45.0	K
9.1	46 54.6	20.9	ab
8.5	56.7	9.7	
9.3	47 28.2	31.1	aB
9.5	28.5	4.1	
9.3	35.3	45.0	R
9.5	48 8.0	9.5	
9.5	18.0	10.0	
9.3	28.6	45.1	
9.3	32.3	43.7	
9.5	39.9	58.4	
9.4	51 24.9	21.8	
4.8	57.1	19.7	K
9.3	52 12.6	36.0	
9.3	27.0	0.7	
9.5	53 31.3	30.3	
9.3	54 1.8	51.2	b
9.3	11.6	9.0	
10pr.	+ 32.01	+ 2.55	

461—520

m	2ᵃ—3ᵃ ′ ″	+8° ′	
8.2	56 54.1	26.3	bK
8.2	56.0	31.8	K
9.3	59 23.0	32.3	
9.0	0 30.6	45.7	K
8.9	46.0	19.1	
9.5	1 4.0	17.1	
8.8	40.6	8.0	K
8.5	2 56.0	37.4	
9.5	3 16.9	39.1	
8.0	19.7	10.1	K
9.3	34.0	17.3	
8.3	54.6	24.6	
9.5	4 22.0	45.8	
8.0	49.4	3.4	K
9.5	5 5.3	16.3	
9.2	7.5	56.9	
9.5	6 3.0	43.3	
9.5	17.7	34.6	
9.0	27.3	38.5	K
8.3	34.6	39.5	K
9.4	43.0	31.9	
7.8	54.6	26.7	K
9.2	7 13.9	25.4	Kb
9.0	54.0	38.1	
9.5	8 3.0	46.5	
9.3	27.6	28.4	
9.3	55.1	56.0	
9.3	55.1	49.5	
8.8	9 34.3	34.0	Kb
9.3	10 3.4	50.9	
9.4	57.4	13.3	aB
9.5	58.7	53.1	
8.8	11 29.1	12.5	K
8.8	52.0	45.2	
7.7	12 8.9	11.3	K
8.3	45.0	30.8	K
9.1	58.5	10.3	a
9.1	13 44.1	50.2	aB
8.9	46.7	25.8	B
8.3	55.0	13.9	Kb
8.5	14 0.0	41.9	K
9.5	4.9	32.9	
9.4	6.5	8.3	a
9.0	16.0	25.0	
9.5	37.6	50.6	
9.5	15 44.3	38.8	
9.5	50.5	20.1	
9.5	51.9	50.9	
9.5	16 30.2	7.8	
9.3	45.2	17.1	
3.8	17 1.2	30.9	K
9.5	12.1	2.5	
9.5	12.1	6.5	aB
9.4	24.0	9.2	
9.5	18 13.8	8.9	F
9.5	54.7	23.8	
9.5	19 11.5	6.6	
9.3	31.2	44.6	
8.0	51.1	16.2	K
9.0	20 4.2	42.9	
10pr.	+ 32.19	+ 2.25	

521—580

m	3ᵃ ′ ″	+8° ′	
9.5	20 44.3	50.5	//
9.5	21 42.2	52.2	
9.5	22 37.4	35.9	
9.0	49.2	5.9	
9.5	23 34.7	31.8	
8.5	54.7	16.5	K
9.5	24 26.2	8.6	
6.2	46.3	52.9	Kb
8.8	50.0	35.8	
9.3	25 17.0	29.8	
8.8	26 33.5	11.7	
7.8	55.2	40.4	K
9.3	27 9.2	33.6	
8.8	46.7	12.1	K
9.5	53.1	11.2	aB
9.5	28 5.2	9.6	
8.0	23.2	24.5	Kb
9.5	29 20.2	17.2	
9.5	24.4	5.0	
9.5	47.2	49.1	
9.5	30 34.6	0.2	
7.5	31 18.2	40.8	K
9.2	23.2	42.9	a
8.8	35.7	34.9	K
9.2	41.0	52.7	a
9.1	42.5	49.9	a
*9.5	32 16.1	25.1	aB
9.5	38.2	19.0	
9.5	41.0	56.4	
9.5	47.5	11.0	
9.5	33 43.3	51.7	aB
9.5	34 47.2	39.7	
7.2	49.5	11.2	K
9.0	35 8.2	34.6	
9.1	29.5	2.4	a
8.8	36 13.2	35.5	
9.5	18.7	39.0	
9.5	31.8	56.4	?
9.5	40.4	44.7	
9.3	46.2	48.5	B
9.3	37 2.0	51.2	
9.5	51.9	55.2	
9.5	38 10.2	32.2	
9.5	23.7	53.7	
8.5	33.7	13.1	K
9.5	39 12.9	13.3	
7.3	14.2	30.4	K
9.5	26.6	4.7	
9.5	40 26.7	28.3	
8.3	30.2	20.0	
8.4	32.5	7.3	K
9.5	41 33.9	5.3	
6.2	41.2	2.2	
6.8	55.2	58.4	L
8.6	42 8.6	50.4	
9.3	15.2	22.2	
9.5	21.7	8.5	
9.4	37.6	51.7	
9.4	41.7	21.6	
9.5	48.0	51.7	
10pr.	+ 32.32	+ 2.00	

581—640

m	3ᵃ—4ᵃ ′ ″	+8° ′	
8.5	42 56.9	0.6	K
9.2	43 0.0	2.0	K
9.4	1.6	16.3	aB
9.0	6.7	50.5	
9.3	25.7	40.8	
9.5	37.2	30.7	
9.5	44 11.8	11.7	
9.5	25.7	30.4	
9.2	41.7	36.2	
9.4	45 5.7	36.6	
9.5	9.5	34.2	
9.5	37.7	27.0	
9.1	46.2	14.4	ab
9.5	51.2	10.6	
8.5	46 22.5	49.2	K
7.0	54.7	45.2	Kb
9.5	56.1	56.4	
9.5	48 9.7	15.8	
9.5	13.7	12.0	
8.9	42.4	5.2	B
9.1	49 23.9	30.4	ab
9.5	54.6	5.9	
9.5	59.3	10.0	
9.5	50 50.7	2.4	
8.8	55.2	36.9	Kb
9.0	51 29.2	14.5	
9.5	52 6.7	55.5	aB
9.5	24.2	57.7	
9.5	31.2	16.4	
9.4	43.7	44.6	aB
9.0	45.0	30.6	
9.3	55.7	26.3	
9.1	57.2	13.4	a
~~9.5~~	~~53 14.0~~	~~2.0~~	
8.8	17.2	2.7	
9.1	27.5	54.9	a
9.5	52.2	12.4	
9.0	54 0.2	3.6	
9.0	1.0	40.9	
9.5	9.7	20.4	
9.4	16.2	56.8	
9.0	44.2	18.0	
8.0	55 7.2	48.7	K
9.5	12.0	9.6	
7.0	18.7	29.0	K
9.1	57.7	34.2	a
9.2	58.5	27.3	
9.5	56 7.4	55.0	
9.2	9.7	47.5	
9.3	31.2	25.5	
8.8	57 42.8	48.5	K
9.3	58 2.1	43.7	
8.0	23.1	6.1	K
9.2	57.8	17.6	b
9.5	59 20.4	28.4	
9.5	43.1	15.2	
9.5	0 35.1	45.8	
9.1	41.9	3.5	K
9.2	1 1.1	30.8	b
9.5	38.7	6.3	
10pr.	+ 32.42	+ 1.76	

641—700

m	4ᵃ ′ ″	+8° ′	
9.5	1 50.3	51.4	
9.5	53.7	54.3	
9.5	2 27.8	59.0	
8.3	30.4	3.1	
9.5	44.8	15.2	
9.0	4 25.3	45.1	K
9.2	5 7.9	56.3	
8.8	8.1	45.1	K
9.5	15.4	0.3	
9.3	26.6	56.4	
6.8	40.7	32.5	L
4.7	6 3.3	53.8	K
9.3	5.1	15.1	
9.1	7 11.4	7.9	a
9.5	22.3	58.0	
8.8	27.7	3.9	K
4.5	40.4	32.5	K
9.0	8 13.4	40.9	K
9.5	27.4	22.8	
9.5	9 2.1	55.1	
9.5	18.4	4.0	
9.5	10 18.4	47.2	
9.5	38.8	7.4	
9.4	39.8	18.7	
9.1	50.8	34.3	aRb
8.4	11 25.1	55.9	K
9.0	26.9	10.2	
9.3	42.4	58.2	K
9.3	57.3	12.4	
8.9	12 8.9	55.9	K
8.5	52.2	2.5	K
7.0	55.8	52.6	K
9.5	13 0.6	22.1	
9.1	31.4	40.2	a
9.1	57.1	27.0	ab
9.5	14 10.9	44.2	
8.8	15 4.1	43.7	K
8.4	6.3	53.6	K
9.4	22.3	29.4	
9.3	47.8	42.3	
9.5	16 7.1	33.6	
9.3	12.7	2.8	b
8.8	25.0	59.4	K
9.5	17 13.4	29.4	
9.5	33.1	45.5	
9.5	45.7	38.0	
6.5	18 30.1	15.8	Kb
9.4	34.4	35.0	
9.3	43.3	16.0	
9.5	55.1	22.1	
9.5	19 2.4	58.6	
9.0	20.1	34.6	
9.5	26.1	54.1	
9.5	27.5	3.3	
9.5	20 8.8	20.0	
9.5	26.4	37.4	
9.5	45.4	13.8	
9.5	21 1.1	10.2	
9.3	6.1	50.8	
9.5	14.0	29.4	
10pr.	+ 32.50	+ 1.51	

546ᵃ 9.6 | 32 12.9 | 48.3 | B

701—760					761—820					821—880					881—940					941—1000				
	4ʰ		+8°			4ʰ		+8°			4ʰ—5ʰ		+8°			5ʰ		+8°			5ʰ		+8°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
9.2	21	54.4	27.3	*b*	9.5	39	14.8	30.8		9.3	51	3.9	57.9		9.2	3	19.0	26.8		9.5	15	8.8	38.4	
9.0	22	29.8	36.7		9.5		24.0	51.9		9.0		10.0	42.1	K	9.4		49.9	25.6		9.2		10.6	51.1	
9.0		41.1	0.2	B	9.5		29.6	42.6		9.2		10.0	11.1		9.3		56.8	52.7		9.4		26.4	59.5	
9.5	23	7.8	53.4		9.5		38.3	33.8		9.0		47.0	34.6	K	9.3	4	3.1	27.6		9.3		53.8	1.0	
9.0	24	1.6	34.3		9.1	40	0.8	10.7	*a*	9.3	52	28.5	13.5		9.4		8.3	47.6		9.3	16	0.8	1.1	
9.0		14.1	44.8		8.6		19.4	41.7	K	9.5		35.9	38.4		8.4		22.9	56.8	K	9.4		6.7	20.1	
9.2		37.7	18.6	*b*	9.5		29.7	21.0		9.3		36.3	10.6		9.3		26.7	53.9	K	9.3		13.0	2.8	
9.5		49.1	57.1	*aB*	9.5		38.9	47.5		9.5		39.4	18 0		9.2		37.0	51.6		9.2		26.6	0 5	
9.5	25	0.8	18.7		9.5		38.9	20.7		9.5		56.3	38.1		8.7	5	7.6	17.6	K	9.3		35.0	26.1	
9.5		15.4	2.3		9.5		53.0	14.5		8.7	53	0.1	59.2	K	9.5		9.3	28.0		8.8		47.6	21.2	K
9.5		28.7	30.8		9.3	41	27.4	43.4		9.5		10.0	21.1		9.5		42.0	28.8		9.3		49.4	27.8	
9.3		53.1	34.3		9.5		32.1	14.9	*aB*	8.8		26.0	38.2	K	9.5	6	3.0	35.6		9.1	17	20.1	9.7	*a*
9.5		59.9	52.2		9.5		43.3	23.8		9.0		28.4	14.1		9.0		21.1	31.1		9.5		36.2	58.0	
9.0	26	29.5	36.7	K	8.8	42	12.3	15.8	K	8.9		35.9	40.6	K	9.5		25.0	41.5		9.5		51.0	12.6	
9.5		42.8	33.3		8.0		13.5	9.8	K	9.5		46.7	26.3		8.5		29.4	56.7		9.5	18	1.7	58.1	
9.5		43.3	39.5		9.5		36.9	5.0		9.3		47.0	42.0	K	9.3		30.9	57.8	*a*	9.5		5.0	31.1	
9.3		54.4	6.5		5.0		43.7	39.8	K	9.0		54.0	15.5		9.3		42.6	34.8		9.5		10.3	5.6	
9.5		54.4	12.3		9.0		48.0	31.3	K	9.2	54	9.8	14.1		9.2		45.9	27.5		8.0		27.1	52.0	K
9.5	27	16.5	1.3		9.5	43	7.2	11.2		8.8		9.9	43.0	K	9.5	7	5.0	1.6		8.1		39.0	7.2	K
9.2	28	10.8	54.5		9.5		44.3	12.6		8.8	55	30.8	49.2		7.3		17.9	15.3	K	9.2		42.1	18.9	
8.8		19.6	54.7	K	9.4		47.4	32.5		9.3		34.3	30.8		9.3		27.2	36.6		9.5		42.3	25.7	
9.5	29	1.1	27.6		9.5		49.5	36.5		9.1		51.9	44.0	*a*	9.5		29.8	56.5		8.5		47.7	0.9	K
9.3		8.1	14.6		9.4		58.4	15.6	*aB*	8.8	56	5.6	48.5		8.0		42.2	15.4	K	8.7		51.6	12.8	
9.4		13.6	14.6	*aB*	9.5		59.3	37.0		9.3		8.8	31.8		8.4		44.0	39.5		9.2	19	4.3	59.2	
9.5		17.8	36.8		9.5	44	0.9	56.1		9.2		9.7	9.6	*b*	8.3		47.1	53.4	K	9.5		8.7	24.0	
9.5		30.5	26.6		9.5		25.5	16.0		9.3		14.7	27.0		9.4		51.6	15.9	*a*	9.5		10.0	57.4	
9 0		37.8	4.2		9.5		26.0	1.5	*a*	9.0		14.7	56.6	K	9.3	8	29.3	8.1		9.1		12.2	18.0	*a*
8.0	30	23.6	24.9	K	9.5		36.5	29.1	*aB*	9.5		40.4	44.0		9.4	9	3.0	31.2		9.5		39.4	58 5	
9.2		49.9	2.6	K	8.8		48.7	6.9	K	8.8		*56.3*	58.2		9.3		9.8	51.9		8.5		46.8	27.1	K*b*
9.5		50.7	26.3		9.3		57.1	25.2	*B*	9.0		53.8	44.3		9.3		15.4	51.5		9.5	20	24.0	19.6	
9.5	31	2.7	53.6		9.5	45	14.3	40.2		9.3	57	1.4	38.0		8.5		16.4	44.8	K	9.5		30.5	31.5	
9.5		43.3	13.2		9.4		16.6	22.5	*aB*	7.0		17.7	44.8	L	8.1		30.9	40.2	K	9.1	21	4.0	40.8	*a*
9.5		54.3	3.4		8.0		21.8	19.0	K	9.4		31.8	5.4	*aB*	9.1		44.8	16.2	*a*	9.4		17.0	47.5	
9.1	32	5.1	43.3	*ab*	9.2		31.7	25.2	*B*	8.5		41.3	15.9	K	8.7	10	2.6	8.0		9.4		17.6	57.4	
9.5	33	0.6	3.8		9.2		50.0	56.6	K*b*	9.3	58	11.5	19.5		9.4		9 7	45.4		9.4		27.5	31.8	
9.5		8.4	53.7		9.5		56.4	25.4		9.2		13.6	8.7		9.5		21.5	45.3		9.4	22	29.2	22.4	*aB*
9.3		41.4	2.8		9.5	46	32.0	41.4		9.5		18.8	48.3		9.5		42.8	29.7		9.5		31.0	52.0	
9.5		56.3	18.7		9.3		48.3	43.1		9.4		22.2	6.7		9.3		49.8	2.3		9.0		37.1	12.0	
9.5	34	7.7	13.8		7.3	47	5.3	21.5	K	9.3		29.2	8.7		8.6	11	7.3	59.7	K	9.3		43.3	13.2	
8.5		15.4	34.0	L*b*	9.2		8.4	45.0	*b*	9.3		52.6	52.7		8.9		10.8	39.7		8.9		50.2	28.4	
9.5		24.1	47.3	*aB*	9.5	48	2.0	10.0		9.3		57.9	30.6		9.5		23.6	58.3		8.8		50.5	57.0	
9.5		36.9	50.1	*a*	9.3		2.0	4.8	*aB*	9.4	59	15.2	59.0		9.5		24.3	15.3		8.0		53.9	16.0	L
9.5		44.9	50.1	*a*	9.0		13.9	54.5		9.3		21.4	48.0		9.5		34.8	36.4		9.2	23	12.1	53.5	*aB*
9.0		48.8	23.6		9.4		23.2	4.0	*aB*	9.2		27.1	20.9		9.5		42.4	11.2		9.2		30.3	18.4	
9.1		59.4	17.3	*a*	9.5		29.8	55.5		9.4		51.5	31.6		8.8	12	0.8	32.7		9.2		33.0	39.1	
9.5	35	8.4	43.0	*R*	9.5		34.6	57.3		5.8		58.9	18.8	K	9.0		5.0	38.0		8.7		50.4	21.5	K
9.5		29.1	44.8		9.3		40.9	33.8	*aB*	9.0	0	1.5	11.3	K	9.4		47.7	40.4		9.5	24	0.0	48.5	
9.1	36	8.4	29.8	*ab*	9.3		41.0	46.9		9.1		3.0	34.8	*a*	8.9		53.9	31.8		9.3		2.1	57.5	
9.5		30.0	12.8		8.3		43.8	45.0		9.5		10.0	32.6		9.4	13	0.6	47.8		9.5		7.0	12.3	
9.2	37	18.5	15.6		9.3		49.3	9.1		9.0		22.3	36.6		9.2		4.1	52.3		8.5		14.0	32.3	K*b*
9.5		46.4	30.5		7.6		50.8	36.0	*B*	9.5		46.3	26.4		9.3		23.9	2.0		8.5		16.5	46.4	
9.5	38	17.3	26.6		9.5	49	17.8	10.2		9.5	1	11.3	37.2		9.5		36.0	32.3		9.5		30.1	30.8	*aB*
9.5		24.0	16.2		9.4		39.1	51.6		8.7		11.8	57.8	K	6.5		51.5	16.5	K	9.5		30.8	36.8	*aB*
8.9		39.4	31.0	B	8.7		58.3	30.4	K	9.0		36.2	35.6		9.4	14	4.3	37.2		9.3		40.4	57.9	
8.2		44.8	3.5	K*b*	9.3	50	1.0	56.3		9.5		43.4	16.4		8.5		8.8	13.8		9.5		45.3	27.4	
9.3		44.9	17.9		9.0		1.2	43.4		9.5	2	29.1	54.7		8.5		12.0	5.5		9.5	25	21.9	58.1	
9.3		48.3	16.0		8.9		13.9	8.8	*B*	9.3		37.8	47.3		9.5		25.0	15 9		8.2		26.3	26.0	K
9.0		48.7	56.5	K	9.1		17.4	24.3	K	8.8	3	4.1	31.6		9.4		31.8	15.8		9.5		40.0	14.5	
7.5		52.3	45.0	K	9.5		46.3	6.6		9.5		9.3	37.6		9.5		58.2	49.8		9.5		57.0	5.8	
8.8	39	10.3	48.8	K	8.3		56.4	45.5	K	8.9		17.8	12.2	K*b*	9.5	15	2.9	3.4		9.3	26	1.9	55.3	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*32.57*	*1.26*		*10pr.*		*32.61*	*1.07*		*10pr.*		*32.64*	*0.91*		*10pr.*		*32.67*	*0.74*		*10pr.*		*32.69*	*0.57*	

−6°

+8°

1001—1060

m	5ᵃ		+8°	
	′	″	′	
9.5	26	23.7	25.7	
9.5		27.4	3.2	
9.5		32.1	6.5	
9.5		40.8	21.6	
8.1	27	22.5	36.1	K
8.7		29.6	49.2	
9.1		32.8	21.9	*a*
9.2		38.9	58.7	
9.2		40.8	20.6	
9.2		48.5	6.0	
9.0	28	10.4	1.1	
8.8		13.0	51.9	K
9.4		41.7	50.2	
9.0	29	22.4	7.6	
8.6		23.7	6.3	
7.0		24.1	52.0	K
9.5		34.1	17.7	
9.5		52.9	15.1	
8.5		58.7	51.4	K
9.5	30	15.0	5.6	
9.5		21.5	39.4	
9.3		24.1	20.4	
9.5		26.2	34.2	
7.4		29.3	24.1	K
9.1		41.8	55.8	K
9.5		50.0	32.8	
9.5	31	21.1	54.5	
9.3		28.9	12.3	
9.2		31.2	6.6	
9.5		42.3	45.7	
8.5		43.6	25.1	K
9.5		58.0	25.1	
9.4	32	3.2	3.0	
9.4		30.7	11.8	
9.5		34.5	38.0	
9.5		38.5	16.9	
9.5	33	15.3	25.7	
9.5		33.1	30.4	
9.4		34.0	11.7	*a*B
9.4		35.2	58.0	
9.5		45.0	38.0	
9.3		49.5	7.0	
9.2	34	9.0	14.3	*a*
8.1		22.1	17.5	K*b*
9.5		23.5	52.2	
9.4		39.3	31.7	
9.5		47.6	34.9	
9.0	35	20.3	4.4	
8.4		38.0	41.3	
9.5		53.0	36.0	
9.0	36	9.3	41.3	
9.5		23.0	15.1	
9.5		25.1	33.8	
8.6		36.8	33.7	L
9.5		40.8	53.0	
9.5		51.0	36.4	
9.5		59.2	12.0	
9.5	37	5.6	34.1	
9.5		25.3	39.3	
8.5		39.8	30.4	K
10pr.		+ *32.70*	+ *0.41*	

1061 — 1120

m	5ᵃ		+8°	
	′	″	′	
9.4	37	40.3	33.4	*a*
9.3		47.5	39.8	
9.5		48.7	19.5	
9.5		59.1	40.1	
9.5	38	6.1	9.9	
9.5		14.2	12.8	
9.5		32.0	4.8	
9.5		33.2	23.6	
9.5		50.3	41.6	
9.5	39	7.4	30.5	*a*B
9.5		20.0	41.2	
8.3		28.1	29.5	
9.5	40	1.5	19.8	
9.5		29.7	21.7	
9.3		39.9	19.4	
9.5	41	15.0	45.3	
9.5		24.8	11.3	
9.1		33.9	58.9	*a b*
9.5		43.3	39.9	*a*B
9.1		49.1	26.6	*a b*
9.0		50.3	1.6	K
9.5	42	9.5	51.7	
9.4		13.4	18.0	
8.8		19.5	5.4	K
9.5		19.7	59.5	
9.5		24.2	34.4	
9.0		39.6	9.8	K
9.2		49.1	59.2	
8.8	43	15.5	3.9	
8.4		15.5	50.8	L
8.5		27.3	26.9	
9.3		36.3	48.9	*a*B
9.5		47.3	18.0	
9.2		53.3	36.7	
9.5	44	3.9	59.4	
9.2		15.0	39.5	
9.5		25.4	1.8	
9.5		39.6	37.5	
9.3	45	6.0	59.3	
9.5		17.0	0.9	
9.2		29.7	13.4	
9.5		49.6	48.3	
9.0	46	0.8	24.9	
9.0		24.8	22.1	
8.8		31.0	15.5	B
9.5		33.6	43.7	
8.0		36.9	1.1	K
9.4		40.9	10.2	*a*B
9.5		50.3	34.0	
8.5		50.7	11.9	
9.5	47	10.3	38.2	
9.2		27.1	26.9	
9.2		30.0	39.1	
9.5		32.3	23.0	*a*B
8.7		46.7	56.7	K
9.5	48	26.5	0.8	
9.5		34.0	23.0	
9.2		40.7	15.9	
9.5		44.1	54.2	
9.5	49	3.5	48.0	
10pr.		+ *32.71*	+ *0.24*	

1121—1180

m	5ᵃ		+8°	
	′	″	′	
9.5	49	15.2	17.3	
9.3		28.7	20.8	
9.3		49.9	2.6	
8.8	50	2.3	12.9	
9.5		6.0	27.2	
9.5		44.1	24.9	
9.4		54.2	40.4	
9.0		57.0	56.7	
9.5		59.9	35.8	
9.2	51	6.6	28.5	
9.0		9.7	54.7	
9.4		14.5	38.6	
8.0		35.1	23.9	K*b*
9.4		49.4	34.4	
9.5		55.4	9.9	
9.5	52	1.1	41.5	
9.5		11.1	56.5	
8.3		19.5	56.5	K
9.5		35.5	28.6	
9.5		39.1	34.6	*a*
9.5		41.1	8.7	
9.0		45.0	12.1	
9.5		48.4	0.5	
8.5		50.2	16.7	L
8.7		54.7	33.4	K
9.5	53	9.6	53.5	
9.5		18.7	1.1	
9.3		20.0	33.7	
9.5		34.2	44.0	
9.5		47.7	1.3	
9.5		53.1	14.2	
9.4	54	2.1	49.2	
9.5		17.3	42.1	
9.2		32.2	31.7	
9.5		33.7	2.9	
8.9		49.2	1.1	
9.3		52.1	38.3	*a*B
9.5	55	19.8	33.2	B
9.5		23.9	48.3	
9.1		28.4	10.7	K
9.0		32.8	35.3	
8.6		38.4	35.0	
9.2		52.3	4.8	K
9.4		56.1	34.4	
9.5	56	13.0	15.7	
9.5		16.3	5.5	
9.5		16.8	42.3	
9.5		18.9	38.0	
9.5		20.1	49.0	
9.4		24.8	30.4	
9.4		35.6	55.3	
9.5		43.1	28.0	
8.2		45.8	13.3	K
9.5		57.0	22.6	
9.5	57	3.5	5.8	
8.6		10.5	57.4	
9.5		17.4	26.6	
9.5		23.1	31.8	
9.5		39.0	4.7	
8.9		44.0	44.6	
10pr.		+ *32.72*	+ *0.09*	

1181 — 1240

m	5ᵃ—6ᵃ		+8°	
	′	″	′	
9.5	58	3.1	25.3	
9.5		19.9	46.2	
9.5		19.9	9.1	
9.3		29.4	37.0	
9.0		31.0	51.7	
9.3		34.3	37.6	
9.3		41.6	26.7	
9.5		49.0	50.3	
9.5		54.3	48.1	
9.5		59.7	28 9	
9.3	59	20.2	22.0	
9.5		25.6	55.2	
8.2		34.4	17.0	K*b*
9.3		42.1	3.2	
9.5		47.3	32.3	
8.5		53.5	57.5	
9.0		59.2	14.6	
8.6	0	14.0	23.6	K
9.0		34.3	40.2	
9.5		35.6	55.8	
9.1		49.0	39.2	K
7.5		52.8	41.5	K
9.5		59.9	35.5	
8.7	1	6.9	55.7	
9.5		10.9	37.3	
9.3		11.6	34.5	
9.3		30.4	19.1	*a*
9.5		42.3	1.3	
9.3		48.7	7.4	
8.5		54.4	46.1	K*b*
9.4		57.6	12.0	
9.3		58.8	22.4	
9.4	2	0.4	16.4	*a*
9.3		4.1	37.2	
9.3		38.1	37.1	
9.4		51.3	32.3	*a*
9.0		59.7	33.9	K
9.1	3	0.3	26.8	*a*
9.3		10.4	34.9	
9.5		12.1	54.6	
8.7		19.9	32.9	K
9.5		20.2	51.9	
9.5		25.3	46.7	
8.9		51.1	49.4	K
9.4	4	12.1	57.6	
9.1		21.4	28.8	*a*
9.5		45.4	29.4	
9.0		49.5	53.8	
9.5		49.6	10.0	
8.5		53.0	7.9	
8.9		58.9	35.8	
9.3	5	2.0	8.2	
9.5		5.5	7.6	
9.4		19.4	42.0	
9.3		21.1	3.0	
9.5		29.9	26.1	
9.2		41.9	20.0	
8.7		47.8	44.5	
9.5		51.4	54.2	
9.5		57.2	52.1	
10pr.		+ *32.72*	− *0.03*	

1241—1300

m	6ᵃ		+8°	
	′	″	′	
9.5	6	14.1	57.8	
9.5		41.3	8.3	
8.9		43.2	20.2	
9.5	7	12.3	37.3	
8.0		17.8	29.2	L
8.8		20.4	53.8	
9.5		30.1	3.2	
9.2		40.2	37.1	
9.3		43.9	49.6	
8.1		51.6	29.7	K
9.2		54.0	53.6	
9.5		57.9	18.5	
9.4	8	0.9	4.7	
9.4		11.3	11.0	
9.2		21.5	30.6	K
9.3		23.4	5.2	
9.4		49.3	0.7	
9.5		52.9	29.1	
9.5		56.2	19.7	
8.9	9	39.1	56.0	K
9.5		43.2	18.1	
9.5		44.4	47.7	
9.5		47.4	34.4	
9.5		57.0	46.5	
9.4		59.8	49.2	
9.5	10	18.5	43.4	
9.4		22.5	24.2	
9.0		28.8	34.8	
9.0		33.8	4.2	
9.2		37.2	16.2	*b*
9.5		55.0	59.1	
9.5		55.1	32.1	
9.0	11	3.8	2.6	K
9.3		9.9	34.8	
9.5		10.0	47.1	
9.5		19.4	36.1	
9.5		49.2	48.8	
9.5		49.4	1.7	
9.5		56.8	56.3	
9.3	12	5.5	42.2	
9.5		7.4	59.0	
9.4		53.4	52.5	*a*B
9.5	13	3.0	21.5	
9.3		6.5	29.4	
9.5		24.1	29.4	
8.3		34.0	46.0	K
8.9		39.3	52.2	K
9.5		41.7	20.8	
9.5		51.2	21.2	
9.4		51.9	48.9	
9.4		52.1	13.6	*a*B
9.5		55.6	9.8	
9.2		59.0	52.6	
9.0	14	9.1	57.4	K
9.4		26.4	36.1	
8.8		28.6	23.3	
9.1		32.2	59.1	*a*
8.8		33.0	45.2	
9.5		38.1	37.8	
9.5	15	1.3	53.5	
10pr.		+ *32.71*	− *0.16*	

m	6ʰ	+8°	
1301 — 1360			
9.4	15′ 11.″6	34.′9	aB
9.5	11.8	43.5	
9.0	13.2	58.7	
9.5	22.6	4.5	
9.2	25.7	26.8	
9.3	27.1	34.7	aB
9.5	30.2	59.8	
9.4	34.4	53.1	
9.5	37.3	49.5	
9.3	39.0	46.5	
9.5	42.6	9.7	
9.5	58.0	33.7	
8.8	16 5.0	58.1	B
9.1	6.4	22.3	aB
9.5	6.6	0.8	
6.4	8.0	57.7	K
9.4	28.5	49.6	
7.6	36.2	28.0	L
8.9	46.0	1.1	
9.5	53.3	15.3	
9.4	53.6	59.5	
9.5	17 4.2	26.7	
9.5	5.1	15.0	
8.8	25.2	5.2	
9.1	34.4	12.7	
9.2	50.4	11.0	
9.5	50.4	39.0	
9.0	56.6	8.9	
9.1	18 0.2	47.4	a
9.3	10.5	24.8	
9.5	14.9	44.2	R
9.3	26.8	3.6	
8.5	46.4	43.1	K
8.8	50.3	47.7	R
8.8	55.0	28.0	K
9.3	58.5	44.6	R
9.3	19 2.2	11.0	
9.2	6.7	6.0	
9.5	12.6	29.4	
8.8	20.8	37.3	K
9.4	24.9	46.9	
9.5	26.6	5.3	
8.8	27.5	29.4	
9.3	35.8	58.8	
8.7	35.8	38.6	K
9.2	37.2	37.5	B
9.5	55.3	10.2	
9.5	20 1.1	32.7	
8.7	3.9	20.6	
8.5	17.2	46.5	Kb
9.5	23.0	2.4	
8.8	30.8	38.8	K
9.5	32.9	1.2	
9.5	45.7	41.0	
9.0	46.1	16.2	K
9.2	54.9	59.9	
9.5	21 32.8	48.9	
9.1	39.3	5.4	a
7.8	43.0	35.4	K
9.4	45.0	36.2	
	+	—	
10pr.	32.71	0.26	

m	6ʰ	+8°	
1361 — 1420			
9.5	21′ 45.″9	39.′0	
9.4	48.2	6.1	
9.4	48.6	7.5	aB
9.2	51.2	30.2	
9.5	22 3.8	41.6	
8.8	8.0	23.0	Kb
7.8	10.1	0.5	B
9.1	19.3	24.1	K
8.5	27.6	45.2	K
9.5	44.9	16.2	
9.0	58.0	38.0	K
9.1	23 9.2	35.1	K
9.2	11.9	55.0	K
9.5	12.2	16.7	
9.5	20.3	47.7	
9.5	25.0	25.6	
9.2	44.8	18.2	
9.5	53.0	30.4	
7.5	24 22.9	55.2	K
8.5	24.4	15.2	
9.2	50.4	40.1	K
9.5	51.6	12.6	
9.3	55.5	44.1	R
9.3	56.6	50.3	
9.5	58.7	35.1	
9.5	59.8	28.2	
9.5	25 19.9	47.2	
8.7	38.9	26.5	K
9.3	50.7	8.3	K
9.3	52.4	52.3	
9.5	26 2.6	35.2	
9.3	6.7	1.3	
8.4	17.3	5.5	K
9.5	21.7	13.2	
9.3	26.5	5.7	
9.3	29.6	31.6	
9.4	30.9	49.5	
9.5	40.3	6.3	
9.2	41.7	27.5	
9.2	44.5	57.8	
9.5	47.7	31.1	
9.0	50.4	56.1	B
9.2	53.8	10.2	K
9.5	56.9	25.7	
9.3	27 3.9	11.1	K
8.6	23.8	7.3	K
9.5	25.2	22.5	
9.5	31.4	29.9	
9.2	52.1	5.7	K
9.5	28 11.4	32.5	
9.2	13.6	59.3	b
9.5	38.2	29.4	
9.5	45.8	57.2	
9.4	29 0.9	5.7	B
9.5	7.8	26.3	
9.5	9.6	8.4	
8.6	16.2	5.8	B
9.3	39.4	52.7	
9.2	43.9	35.7	
9.5	56.4	18.8	
	+	—	
10pr.	32.70	0.38	

m	6ʰ	+8°	
1421 — 1480			
9.4	30′ 12.″5	2.′0	
8.4	32.5	36.6	B
9.3	47.3	39.3	
9.5	52.5	57.2	
8.3	57.2	5.4	
9.5	57.9	20.1	
var	31 16.2	52.7	
9.5	17.2	13.4	aB
9.3	20.6	53.7	B
8.9	24.0	46.2	B
9.5	32.7	41.3	
8.9	40.2	28.1	
9.5	58.7	48.8	a
9.3	32 4.0	24.1	
9.2	5.0	39.7	b
9.3	13.6	29.4	
9.5	26.1	27.7	
8.5	29.0	16.9	K
9.1	44.0	37.7	
9.3	45.1	36.6	
9.5	51.7	14.2	
9.5	56.0	9.0	
9.5	58.2	10.3	aB
9.5	59.2	11.1	
9.5	33 0.4	14.3	
9.3	11.3	2.0	
9.5	14.4	11.7	aB
9.2	18.6	2.0	
9.2	28.5	36.1	
9.4	42.8	10.2	aB
9.3	42.8	20.4	
9.5	46.9	36.4	
9.5	34 3.1	39.0	
8.8	6.4	1.1	
9.5	19.6	53.0	
9.5	34.9	3.8	
9.5	36.6	7.7	
9.5	41.4	32.1	
8.4	48.4	59.3	K
9.5	35 19.7	9.3	
9.2	23.7	52.9	
9.1	34.5	56.3	a
9.5	41.8	21.7	
9.4	52.0	35.9	
9.3	36 16.4	41.2	
8.8	16.9	33.5	
9.4	23.5	12.8	
9.5	25.7	57.1	
8.5	28.8	27.4	
9.5	33.0	9.7	
9.0	36.1	35.7	
8.8	37.2	48.5	
9.5	49.2	17.3	
9.5	37 14.7	6.5	
9.3	23.4	10.0	
9.3	24.5	41.4	
8.3	26.6	58.3	
9.5	31.4	29.1	
9.5	37.4	52.9	
9.3	53.1	15.1	
	+	—	
10pr.	32.70	0.48	

m	6ʰ	+8°	
1481 — 1540			
9.0	37′ 53.″2	41.′9	K
9.3	58.7	7.0	
9.3	38 2.5	58.2	
9.5	15.1	51.5	
9.4	24.6	21.4	
6.0	38.3	44.3	K
7.8	47.6	30.4	K
9.2	48.2	33.1	a
9.3	48.9	44.0	
8.4	53.4	2.5	P
9.2	54.4	57.2	
9.0	39 0.3	2.4	
9.1	12.2	2.6	L
8.8	20.5	18.0	
8.3	21.0	40.3	K
5.3	27.7	11.2	L
9.2	38.7	44.3	K
9.5	40.1	37.9	
8.9	56.5	9.8	B
9.0	57.3	10.8	B
8.1	58.8	1.5	B
9.1	40 11.5	26.2	a
9.5	24.3	53.2	
9.4	25.0	41.2	
9.4	27.5	46.6	
8.9	34.3	46.8	K
8.7	46.9	5.9	
9.2	53.4	58.1	Kb
9.1	57.0	52.6	K
8.3	41 13.9	30.0	
9.4	21.7	13.2	
9.3	34.4	44.5	
9.3	40.6	13.5	
9.5	44.5	58.0	
8.8	49.8	33.7	
8.7	50.6	5.2	
8.0	59.3	48.5	K
9.3	42 0.2	25.2	
9.4	11.9	57.4	
9.5	12.8	45.7	
9.3	18.2	54.4	aB
9.5	29.7	24.8	
9.5	30.0	1.6	
9.5	30.9	50.1	
9.5	43.0	0.6	
9.5	43 1.5	55.2	
9.5	4.0	33.0	
9.5	5.3	23.9	
9.2	17.1	37.9	
9.0	21.9	3.9	B
8.8	25.1	40.9	
9.5	57.8	52.5	
9.5	44 0.8	27.8	
9.3	3.2	29.4	
9.2	5.0	57.7	
9 3	8.6	27.2	
9.5	14.8	35.4	
9.2	22.5	51.4	
9.5	32.9	12.2	
9.0	32.9	16.0	
	+	—	
10pr.	32.69	0.60	

m	6ʰ	+8°	
1541 — 1600			
8.2	44′ 34.″0	4.′2	L
8.7	47.2	51.7	K
6.2	56.8	33.0	L
7.8	45 2.3	50.2	K
9.2	3.5	36.3	
9.5	12.3	16.2	
8.8	32.8	18.9	
9.5	32.8	31.0	
9.5	37.6	25.0	
9.0	38.7	26.2	
9.5	58.1	14.6	
9.5	46 3.7	38.7	
9.4	9.7	35.9	aB
9.5	19.7	21.6	
9.5	21.4	44.3	
9.1	52.8	22.8	a
8.2	47 8.1	41.9	L
9.0	16.8	13.6	
9.3	19.7	27.8	
9.3	25.4	27.6	
9.5	34.5	53.9	
6.8	41.1	30.4	L
8.7	49.8	38.7	
8.8	52.0	6.3	
9.1	54.6	37.9	a
9.4	48 3.2	57.5	aB
9.3	17.6	36.4	
7.5	19 4	55.3	Kb
9.3	22.0	32.1	
9.4	27.1	46.0	aB
9.5	33.5	28.2	
9.4	48.1	46.2	aB
9.3	53.2	16.9	B
9.5	53.7	31.7	
9.3	55.5	36.1	
9.5	56.9	55.1	
9.5	58.2	20.4	
9.5	49 16.7	36.8	
9.5	20.3	52.2	
9.5	32.0	47.6	
9.4	32.0	56.7	
9.1	32.7	38.1	aBb
9.5	39.9	23.6	
9.3	40.0	56.5	K
9.5	50 4.7	5.3	
8.7	5.0	20.6	K
9.5	8.3	53.5	
9.5	23.0	42.1	
9.2	24.5	51.9	
9.2	25.7	21.0	
8.6	26.4	4.4	K
9.5	35.4	32.0	
9.3	48.1	9.3	
9.0	57.9	48.0	
8.8	51 0.5	51.5	
9.5	52 1.2	36.4	R
9.3	5.4	31.0	
9.5	8.6	8.0	
9.5	11.5	21.1	
9.5	22.4	57.8	
	+	—	
10pr.	32.67	0.70	

1601—1660					1661—1720					1721—1780					1781—1840					1841—1900				
	6ʰ—7ʰ		+8°			7ʰ		+8°			7ʰ		+8°			7ʰ		+8°			7ʰ		+8°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	52	27.7	56.7	*a*	9.3	0	17.7	46.8		9.3	9	46.2	4.7		8.2	20	55.5	13.2	*B*	8.3	31	56.4	10.1	K
9.3		42.6	58.6		8.6		25.3	41.2	L	8.7		47.1	23.9	K	9.3	21	25.5	0.8		8.5	32	0.3	57.0	K
9.3		49.2	9.4		7.6		31.1	6.2	L	8.5		53.5	3.1	B	9.5		29.4	9.3		9.5		2.7	22.5	
9.1		52.1	43.6	*a*	9.3		56.7	23.6		9.5		59.7	27.2		9.3		42.8	40.7	*aB*	9.5		11.5	31.3	
9.3		53.0	50.1		9.4		57.2	6.6		9.4	10	3.3	42.4		8.0		45.2	8.2	K	9.3		18.3	29.3	*aB*
9.5		58.2	56.2		9.3	1	23.3	0.4	*aB*	9.0		6.2	23.0	K*b*	9.2	22	11.7	33.1	*b*	9.0		55.7	43.7	K
9.5	53	0.4	17.8		9.3		26.2	4.7		9.2		10.0	39.9		9.5		21.0	33.6		9.5	33	0.8	52.7	
8.5		29.8	50.1	K	9.2		41.5	2.2		9.3		10.4	47.5		9.5		24.1	41.1		*8.3		31.7	45.8	K
9.5		31.1	49.8		8.6		41.5	50.0		9.4		14.6	32.4		8.0		37.7	0.8	K	9.4	34	17.9	22.1	
9.5		34.7	40.7		9.2		48.4	21.4		9.5		20.8	4.4		9.3		45.0	57.6	*a*	9.2		36.4	21.0	*b*
9.5		38.2	28.9		9.4		58.1	38.9		9.3		23.5	41.9		7.8	23	3.2	51.2	K	9.3		36.5	16.8	
8.8		46.3	37.8	K	9.5		58.2	7.2		9.2		28.3	58.8		8.6		10.6	11.9	K	9.4		46.0	23.3	
8.6	54	1.9	17.7		9.5	2	6.9	22.1		9.5		44.1	13.9		9.3		11.5	1.1		8.5	35	46.7	37.0	K
8.7		6.3	44.2	K	8.4		10.8	6.4	L	8.8		45.1	9.9	K	9.5		43.0	47.8		9.4		51.6	2.7	
9.5		11.2	6.3		9.4		11.3	25.3		7.7		53.4	44.8	L	8.8		45.7	25.2	K	9.5		58.5	10.5	
9.3		26.5	10.0		8.5		31.0	20.9	K	9.5	11	5.5	8.5		9.1	24	0.2	5.2	*a*	9.3	36	0.0	6.5	
8.5		31.0	44.7	K	9.4		41.3	34.7	B	9.5		20.6	53.2		9.2		1.3	27.5		9.5		21.6	29.2	
8.3		32.4	19.6		9.5		44.6	55.9		8.8		29.1	32.0		8.9		9.7	1.2	K	9.3		23.9	58.1	
8.2		35.9	52.7	K	9.4		45.0	23.7	*aB*	8.8		32.5	19.2		9.3		25.7	40.9		9.5		24.0	21.3	
9.3		42.1	1.1		9.0		53.7	42.6		8.5	12	9.4	15.7		*var		50.8	37.8	*B*	8.5	37	1.7	54.8	K
9.4		58.4	24.7		9.5		56.1	9.4		9.2		10.9	57.9		8.5		53.4	57.8		9.5		30.5	21.6	
8.8	55	0.8	47.1	K	9.5	3	1.0	15.3		9.0		21.5	48.9		9.5		56.4	21.3	*aB*	8.7		37.6	6.6	
9.5		3.1	49.4		9.5		16.8	29.5		9.3		27.9	50.4		9.5		57.1	22.3		8.1		44.9	4.9	*B*
9.4		9.7	26.4		9.5		50.4	11.8		9.4		29.7	17.7		9.5	25	9.8	12.6		9.3	38	11.7	10.8	
9.3		10.5	18.6	*aB*	9.5	4	3.1	3.0		9.2	13	18.7	56.7		9.5		10.2	42.2		8.6		28.7	0.5	K
9.4		18.3	58.7	*aB*	9.5		16.2	16.8		9.5		24.4	1.5		9.5		18.4	24.3		9.0		32.9	58.4	
9.1		26.4	22.7	*a*	8.7		24.9	23.8	K	9.5		58.7	54.3		8.8		21.2	16.7	K	9.5		46.0	33.7	
9.3		31.6	57.4	*aB*	9.5		25.1	2.0		8.8	14	32.1	30.4	K	9.3		38.0	16.3	*aK*	9.5		58.2	45.5	
8.2		32.9	55.7	K	9.4		29.7	41.7		9.3		38.6	19.3		9.5		54.8	34.8		9.1	39	18.3	54.5	*a*
8.9	56	2.0	53.6	K*b*	9.5		36.2	18.2		8.8		42.6	25.1	K	9.0	26	4.1	13.4		9.1		22.5	0.3	*a*
9.3		7.6	53.5		9.4		39.0	59.6		9.3	15	9.4	29.9		9.0		5.9	32.8	B	8.7		23.0	42.8	
8.0		8.4	27.4	K	9.5		43.0	7.6		9.0		45.8	50.4	K	9.5		14.7	8.3		9.3		30.1	20.0	
9.2		15.7	27.6		9.0		50.1	53.1		9.3		50.8	55.6		9.5		28.7	40.2		9.3		32.7	26.9	
9.5		18.9	0.7	*aB*	9.5		56.3	1.1		9.5		52.7	57.7		9.2		53.0	47.1		8.8		34.4	47.6	
8.2		38.3	27.7	K	9.4	5	8.0	10.4		9.3	16	14.0	53.7		9.5	27	25.7	1.2		9.0		56.7	29.0	
9.5		53.1	4.7		8.9		9.4	5.3		8.5		18.1	25.7		8.2		27.8	50.2	*B*	9.5	40	19.5	27.7	
9.4	57	3.7	49.5		8.7		24.4	47.5	K	9.5		26.9	35.4		9.5		40.5	16.8		9.3		32.0	5.2	
8.5		10.3	45.1	K	8.7		44.0	26.5	K	8.5		27.2	10.0	L	9.5	28	7.0	32.3		9.3		49.6	52.2	
9.5		16.8	38.0		9.1		50.5	15.6	*aB*	9.5		48.8	31.4		9.5		7.3	46.5		9.2	41	3.8	11.3	
8.8		33.8	59.2	K	9.4		53.7	15.7	*aB*	9.5		57.1	22.6		8.6		20.7	6.3	K	9.3		15.2	2.2	
9.2		53.2	49.5		8.9		54.2	39.5	B	9.5	17	0.5	53.8		9.0		39.9	50.2		9.5		19.7	59.7	*aB*
8.1		54.0	4.1	K*b*	9.3		55.1	28.0	*aB*	9.1		37.1	6.0	*aB*	9.5		50.4	39.0		9.5		49.5	39.5	
9.2		57.6	20.9		9.5		56.8	40.0		9.1		39.3	7.2	*a*	9.3	29	20.0	0.9		8.2		50.7	32.8	K
9.5	58	3.3	25.4		9.5		59.7	43.6		9.4		48.0	2.2		9.5		23.1	4.8		9.4		58.7	54.3	*aB*
9.3		15.8	4.0		9.3	6	9.0	30.0		9.5		54.1	4.5	B	9.5		34.7	34.7		9.4	42	1.6	27.4	
9.5		22.4	12.9		9.4		14.6	36.9		9.5	18	0.2	55.5		9.0		51.7	29.4	K*b*	9.4		2.2	19.6	
9.1		36.6	46.1	*a*	9.5		28.1	30.3		9.0		13.3	4.2	B	9.3	30	28.5	8.5		9.4		7.4	58.0	
9.0		38.3	46.6	B	8.2		41.9	16.6	K	8.6		33.5	38.1	K	9.0		51.2	47.9		9.3		9.5	0.8	
9.3		41.0	9.0		9.4	7	16.5	57.8		9.3		34.3	6.7	B	9.1		53.6	27.8		8.4		15.6	19.4	
9.0		48.0	17.5	B	8.4		21.8	37.9		9.2		35.6	54.7		9.3		59.0	33.5		8.8		27.0	56.7	K
8.4		48.1	56.3	L	9.3		28.9	8.4		8.9		48.0	4.5		7.8	31	0.1	17.7	K	9.5	43	8.9	40.1	*aB*
8.8		49.7	31.5		6.8		47.5	13.6	K*b*	8.6		50.7	18.3		8.4		3.7	46.8		8.7		10.4	7.5	K
9.1	59	4.0	49.1	*aB*	9.5		48.3	7.8		9.0		58.1	53.6		8.7		7.3	19.7	K	9.5		14.5	27.0	
9.5		4.0	48.1		8.4	8	5.4	28.0		3.0	19	16.9	34.8	K	9.4		8.3	31.3		9.5		16.2	5.5	
9.3		4.5	19.7		9.1		9.7	4.4	*a*	8.8		31.2	37.8	K	9.1		17.4	19.8	*a*	9.0		39.1	56.1	
9.5		21.7	34.7		9.5		25.3	42.0		9.5		43.0	37.0		9.1		19.3	2.3	*a*	9.5		52.6	1.6	
9.5		36.8	2.5		9.5		44.2	29.5		9.4		44.0	17.1		8.3		19.8	9.5	K	9.5		56.0	46.7	
9.3		38.3	53.4		8.7		59.5	23.5	K	9.5		49.0	45.5		9.0		26.5	2.5		9.4	44	3.5	0.5	
8.8	0	14.4	50.2	K	9.5	9	18.4	0.3		9.0	20	18.7	44.2	*B*	9.0		26.9	10.4		9.5		23.1	4.9	*aB*
9.1		15.7	46.6	*a*	9.0		36.2	53.0		8.2		44.3	48.4	L	9.5		30.7	55.1		9.5		23.2	49.3	
		+	—				+	—				+	—				+	—				+	—	
10pr.		*32.66*	*0.81*		*10pr.*		*32.64*	*0.93*		*10pr.*		*32.61*	*1.07*		*10pr.*		*32.58*	*1.22*		*10pr.*		*32.53*	*1.40*	

1799	*a*			
9.5	*24*	*32.0*	*36.0*	

1847	*a*		
var	*33*	*29.0*	*43.0*

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	7ʰ		+8°			7ʰ—8ʰ		+8°			8ʰ		+8°			8ʰ		+8°			8ʰ—9ʰ		+8°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
9.5	44	27.7	9.3		9.5	57	31.8	30.7		9.5	9	11.0	27.7		8.9	27	56.3	6.9	K	9.3	48	38.2	11.5	
8.8		51.7	26.9	R	9.4		33.1	5.8		9.5		17.8	17.7		8.8		59.8	40.3	K	9.4		53.6	5.0	aB
9.2		56.4	22.8		8.0		34.8	36.4	K	8.9		32.2	8.3		9.5	28	16.3	35.7	aB	9.5	49	4.8	36.2	
9.0	45	21.7	33.3		8.7		50.7	39.9	K	9.5	10	4.1	14.6		9.5		20.0	35.4	aB	9.0	50	3.4	31.2	B
9.5		30.9	22.1		9.4		54.9	57.1		9.5		22.8	13.5		8.5		25.1	13.3	K	9.0		6.3	58.6	
9.5	46	0.1	5.3		9.2	58	19.3	27.4	*b*	9.2		38.9	37.1	*b*	9.5		39.8	42.4		8.7		6.5	37.5	K
9.5		11.3	53.9		9.5		31.4	11.0		9.2	11	44.5	17.1		9.3		46.9	50.6		9.5		49.3	56.9	
9.2		36.6	16.9		9.5	59	35.4	12.0		9.5		57.4	21.9		9.3	29	13.1	50.3	K	8.3		59.6	47.9	K
9.3		36.6	23.0		9.3		40.9	12.6	*B*	9.5	12	2.3	57.5		9.2		15.8	44.1	K	9.5	51	34.4	34.5	
9.3		46.5	20.7		9.1		53.5	26.3	*a*	9.1		4.3	3.1	*ab*	9.5		25.3	20.5		9.0		55.0	59.3	
8.8	47	5.0	15.4		8.6	0	2.1	7.9		9.3		16.2	4.1		9.3		47.9	42.7	aB	9.3		58.0	45.0	
9.5		5.7	41.3		9.5		4.2	22.3		7.5		34.7	27.7	K	9.5		53.7	6.6		9.0	52	13.7	12.5	L
9.3		22.9	10.3		9.5		18.8	41.5		9.0		42.3	57.4		9.2	30	9.6	44.5	aB	*9.5	53	23.7	25.8	
9.3		25.6	49.2	aB	8.2		24.7	38.8	K	*9.5	13	5.0	10.2		9.5		19.5	7.8		9.5		36.0	54.0	
9.5		44.6	24.2		9.5		31.4	0.3		*9.5		49.2	45.8		9.2		24.6	39.9		9.5	55	53.7	38.7	
9.2		46.4	39.3		9.2		59.6	17.7	aB	9.2	14	1.4	35.2	*aBb*	9.5		33.8	15.4		9.3	56	11.4	15.4	
8.4	48	4.7	0.1	K	9.0	1	3.1	52.6		8.6		16.2	6.0		9.5	31	3.5	40.8		9.5		26.0	48.8	
8.8		8.9	32.3		9.1		3.2	8.8	*a*	9.3		17.0	16.8		8.7		27.0	4.8	L	9.5	57	2.5	53.6	*a*
9.4		16.2	41.1		9.4		6.5	14.6		9.5		32.9	38.6	aB	7.5		39.3	30.6	L	9.0		12.4	23.7	K
9.3		32.7	29.2		7.8		12.4	27.6	K	9.2		49.7	15.8		9.5	32	1.1	25.0		9.1		38.0	0.3	*a*
8.5		56.6	57.1		8.6		30.9	58.9	K	9.5		54.8	32.1		9.2	33	58.9	46.5	K	9.5		38.0	4.2	
9.1	49	0.2	5.3	*a*	9.5		40.1	52.1		8.5	15	11.1	5.5	K	9.4	34	8.3	36.5	aB	9.4	58	50.0	48.0	
9.1		25.4	47.5	*a*	9.2		44.1	40.2		8.5		33.3	11.8	K	9.5		37.0	44.0		9.5		54.3	9.7	
9.0		27.5	21.8		9.5	2	2.7	4.0		9.1		57.0	53.6	*a*	9.2	36	12.4	12.2	K	8.2	59	13.4	54.6	K
9.5		33.2	54.7		9.3		51.3	14.0		8.8		58.2	0.0	*Kb*	9.3		13.1	34.2		8.2		54.5	4.1	*Kb*
8.8	50	7.3	13.0		9.5	3	23.3	38.6	*B*	9.3	16	4.9	28.9		9.2		13.2	27.8	*aB*	9.5		55.7	34.2	
9.5		50.0	13.1		9.0		33.2	50.4		9.3		14.3	49.2	aB	9.3		27.6	12.3	K	9.5	0	18.7	11.1	*a*
7.5	51	0.5	50.8	L	9.5		48.9	9.7		8.0		39.6	6.2	K	9.3		30.9	51.8	*aB*	9.5		22.6	43.6	
8.6		4.7	54.9	L	8.9	4	6.6	39.3		9.2		41.4	48.7	*aB*	9.0		37.1	47.9	B	9.0		50.5	1.6	K
9.5		5.5	45.6	aB	9.5		32.0	22.2		9.3		56.9	27.4		8.8		43.2	36.0	B	8.8		53.7	12.5	K
8.7		11.7	32.6		9.5		33.2	12.4		9.2	17	17.7	57.8		9.5		56.4	35.6	aB	9.4	1	16.0	59.5	
9.5		20.6	27.9		9.5		53.5	30.8		9.5		21.9	58.0		9.0	37	3.7	9.7	K	7.3		18.5	6.0	K
8.7		21.2	21.1	K	9.3	5	6.1	23.9		5.2	18	8.4	2.1	K	8.8	38	22.4	20.2	K	9.5	2	15.7	31.7	
9.5		48.7	54.7		9.5		14.4	46.9		8.8		10.9	17.5		9.2		53.5	35.5	aB	8.2		20.4	6.5	*Kb*
9.5		56.3	47.0		9.5		15.0	2.6		8.9		16.7	28.9	B	9.5	39	14.1	48.3		9.3		26.9	32.3	
9.5		56.8	49.5		9.2		34.1	10.7		9.2		20.6	23.1		8.2		30.4	7.6	K	9.0		53.4	9.7	
9.5	52	19.3	4.1		~~9.5~~		~~36.7~~	~~33.5~~		7.5		56.9	7.3	L	9.2		47.4	47.2	K	9.5	3	25.2	0.7	
9.5		24.9	35.1		9.2		40.5	47.8		9.2	19	57.0	38.3	*b*	9.2		52.2	51.1	K	9.4	4	14.7	53.0	*a*
9.1		29.1	29.1	K	9.0		42.0	36.2	B	9.0	20	24.4	20.9	B	9.5		56.1	51.0	B	9.3	5	14.7	30.4	
9.5		51.0	52.4		9.4		42.8	53.5	aB	9.5		25.5	16.7		9.5	40	7.7	7.6		9.3		22.1	49.9	aB
8.5		58.8	18.8	K	9.5		44.8	33.5		9.2		34.5	17.7		9.2		8.6	44.1	K	9.4		42.4	43.2	aB
9.4	53	0.8	29.5	aB	9.5		49.8	58.8		9.5		54.1	7.8		9.1		58.4	59.6	*a*	9.5		42.4	40.1	*a*
9.5		8.9	56.4		9.5		51.8	58.5		9.3	21	45.3	2.3		9.5	41	8.6	37.2		8.5		45.0	38.7	K
9.4		10.6	42.2		9.5		55.2	33.3		7.0		47.3	53.8	*Kb*	9.0		24.3	34.0	K	9.3		48.2	46.1	
7.5		22.7	46.8	K	7.8	6	5.3	9.8	K	9.5	22	1.6	0.4		9.5		32.8	27.8		9.5		55.0	21.4	aB
9.3		23.0	16.3		9.3		23.9	47.8		9.5		1.6	7.9	*aB*	9.0	42	2.5	4.8	*Kb*	8.5	6	1.4	12.6	K
8.9		59.5	11.0		9.3		31.7	2.3		9.0		15.4	53.4	K	8.5		15.7	47.5	K	9.0		19.0	58.2	K
9.4	54	12.2	46.9		9.1		49.3	7.8	*a*	9.3		54.1	54.3		9.2		18.3	49.3		9.5		44.4	41.5	
8.7		18.8	42.1	K	9.1		53.4	1.3	*a*	9.0	23	3.0	56.6	B	9.3		30.1	55.8		9.2		45.3	57.9	K
9.3		43.9	34.6		9.3	7	24.2	36.4		9.5		42.9	27.1		9.0		44.0	16.4	K	9.0		46.4	24.1	
9.5	55	11.7	48.0		8.6		33.7	7.1	K	9.3		57.9	49.9	aB	9.2		54.9	23.6		9.0	7	1.7	52.4	K
9.3		18.7	7.6		8.7		41.3	15.4		9.5	24	42.7	45.5		8.2	43	27.7	51.7	K	9.5	8	5.4	51.2	*a*
8.9		28.7	43.2	L	8.3		43.9	4.8	K	8.8		45.8	58.0	*K*	9.5	44	0.6	55.9		9.5		10.3	13.3	
9.5		44.3	6.7	aB	9.2		53.9	4.0	aB	9.5	25	9.8	4.3		6.8		29.3	35.8	K	9.5		26.0	48.8	
9.5		53.1	5.0		9.5		54.9	3.8	~~aB~~	9.2		32.6	24.7	K	9.0		35.7	44.8	K	9.0	9	2.7	50.9	
9.4	56	7.3	41.8	aB	9.5		59.9	29.1		9.2		51.3	11.1	K	8.7	45	31.6	19.9	K	9.3		5.4	41.9	
9.2		7.3	28.7		8.7	8	19.6	8.9	K	7.0	26	25.6	56.5	L	8.8	46	8.9	19.9	K	7.8		46.5	58.2	K
8.5		11.4	40.0	K	9.5		26.1	29.1		8.8	27	14.7	56.0	K	7.7		11.5	56.9	P	9.5	10	4.4	51.5	
9.0		27.6	4.8		9.4		43.2	3.0		9.5		49.1	14.3		9.5		47.5	13.0		7.2		9.2	33.4	*L*
9.4	57	28.6	1.6		9.3	9	8.4	41.1		9.0		54.9	35.1		9.0	48	24.0	55.2		8.0		24.0	50.8	K
		+	—				+	—				+	—				+	—				+	—	
10 pr.		*32.49*	*1.55*		*10 pr.*		*32.43*	*1.73*		*10 pr.*		*32.37*	*1.88*		*10 pr.*		*32.27*	*2.13*		*10 pr.*		*32.12*	*2.37*	

2034 a
9.5 | 13 35.9 | 36.2 | B

2152 a
9.6 | 52 15.3 | 43.1 | B

2201—2260

	9h		+8°	
m	′	″	′	
9.0	10	58.0	45.7	K
9.0	11	45.7	13.0	
8.5		46.7	52.8	Kb
9.5	12	4.4	2.4	
8.5		15.0	47.4	K
9.5		49.4	28.3	
9.0		57.7	47.3	K
9.0	13	8.0	52.9	K
9.5		25.4	16.1	
8.4		59.4	49.8	Kb
8.8	14	49.7	1.9	K
9.5	15	6.8	46.1	αB
9.0		37.3	59.1	
9.5		41.4	25.1	α
7.3		48.0	19.9	Kb
9.5	17	15.1	4.5	
9.5		41.4	33.4	
9.5	18	13.7	42.9	
9.3		34.6	57.5	α
8.5		52.4	18.3	K
9.3	19	19.4	16.5	
9.3		29.6	4.8	
9.5		36.9	7.2	
9.2	20	5.2	20.1	αB
8.5		12.4	55.0	Kb
6.0		46.6	49.1	K
8.8		49.4	4.9	
9.5	21	8.0	32.9	
9.0		14.0	18.9	
9.5		40.1	39.5	
9.0		44.7	18.9	K
9.3	22	18.6	57.1	
9.5		33.4	36.7	
9.5		34.4	52.3	
9.1	23	32.7	41.5	K
9.3	24	44.2	3.8	K
9.2	25	3.0	6.0	K
9.0		6.7	42.5	
9.2		14.0	48.0	K
9.2		22.6	0.7	K
9.5		38.4	51.9	
9.5	26	56.0	54.7	
8.2	27	0.7	49.5	K
9.5	28	27.2	29.7	
9.0	29	3.7	47.4	
9.4		34.6	6.2	
9.5		59.9	40.5	
9.5	30	6.8	28.0	
7.7		41.4	21.7	K
9.4	32	21.0	2.6	α
7.8		28.3	56.0	K
9.3	33	14.4	46.0	
8.8		20.3	50 8	K
9.5		42.6	54.5	
9.5	34	12.5	1.9	
8.9		18.8	47.7	
8.8		29.6	14.2	K
8.8		44.4	4.0	K
9.4		59.8	17.6	
9.5	35	11.7	27.5	
10pr.		31.99	2.58	

2261—2320

	9h—10h		+8°	
m	′	″	′	
8.2	36	1.8	37.4	K
8.8		8.3	10.0	K
9.5		27.1	17.5	
9.5	37	32.9	48.0	
9.2	38	2.1	40.1	K
9.5	39	26.4	56.1	
9.5	40	43.1	37.7	K
8.0	41	10.5	58.5	K
9.5		23.9	30.0	
9.5		28.8	39.4	
9.5		38.9	31.7	
9.5		46.0	32.1	
9.5	42	41.7	31.1	
9.0		46.2	7.9	K
8.0	43	14.3	47.7	K
9.0		21.9	45.0	Kb
9.5		31.8	3.7	
9.5		46.6	51.9	
9.5		49.1	34.1	
9.2	44	5.8	4.2	K
8.5		31.8	47.7	K
9.5	45	1.9	55.0	
9.5		13.0	39.1	
9.0	46	9.3	9.9	
7.2		26.8	45.4	K
9.0	47	52.8	20.7	K
9.0		54.3	46.4	K
9.2	48	2.8	23.4	K
7.5		15.7	23.1	K
9.5	49	43.2	13.4	
9.4		59.3	58.6	
9.3	50	22.4	18.3	
9.5		45.9	58.6	
9.5	51	14.8	55.4	
9.5		15.9	35.6	
8.7		28.3	7.0	K
9.5		40.4	3.0	
9.5		47.9	23.7	
9.0	52	17.3	37.4	K
9.5		21.4	38.4	
5.0		32.9	44.3	K
9.3	53	3.5	17.7	
8.9		14.5	54.7	K
9.5		16.9	31.5	
9.3		42.3	20.5	
9.5		46.0	25.8	
9.5	54	1.8	55.2	
9.5		37.3	46.3	
9.1		47.8	35.4	α
9.0	55	11.3	25.0	Kb
8.2		38.2	56.2	K
9.5		52.0	32.4	
9.3	56	23.7	11.5	
8.8		32.7	32.4	K
9.5		57.2	22.3	
7.5	57	24.5	41.5	Kb
9.5		55.8	24.0	
9.5	58	18.6	59.2	
8.5		39.3	38.6	K
9.5	0	16.4	30.7	
10pr.		31.80	2.81	

2321—2380

	10h		+8°	
m	′	″	′	
9.5	0	26.6	14.7	
8.8		34.3	44.9	
9.0		40.4	16.7	
9.5	1	17.5	1.8	
9.5		40.8	28.6	
9.5	2	2.0	18.2	
8.5	3	15.7	24.1	K
9.2		39.3	20.6	K
9.5	4	27.0	28.2	
9.5		37.0	40.7	
9.0		58.1	24.0	L
9.5	5	19.0	5.0	
9.5	7	25.7	20.6	
9.1		31.3	13.3	Kb
9.5	9	9.9	4.9	
8.8		17.7	57.7	Kb
9.5		59.0	19.5	
9.3	10	9.5	13.5	K
9.5		12.5	44.0	
9.2		31.1	48.0	K
8.7		33.7	15.0	K
9.3		43.8	6.5	
9.5	11	31.0	39.3	
9.0	12	11.8	20.5	L
9.0		14.0	10.4	L
9.0		16.6	59.5	
8.9		21.0	40.0	
8.7		42.3	24.3	L
9.5	14	22.5	34.3	
9.5		52.0	9.4	α
9.5		53.0	29.7	
9.0	15	4.3	9.2	K
9.5		14.5	46.8	
9.5		24.4	39.0	
9.2	16	44.0	34.1	K
9.5	17	28.5	34.3	
9.5		29.0	51.7	
9.5	18	11.0	39.4	
8.8		27.5	45.9	K
9.5	19	22.3	40.3	
9.0		25.7	23.3	
9.5		28.3	3.2	
9.5		45.5	10.7	
9.5	20	44.5	38.5	
9.5		45.0	44.0	
9.5	21	15.3	17.4	
8.5		33.7	30.6	L
8.7		39.3	38.3	L
8.5	22	14.0	47.2	K
9.2		31.0	38.4	Kb
9.5	23	8.5	11.4	
9.5		10.5	32.2	
9.5		12.5	28.0	
9.5		52.5	43.3	
9.5	24	39.7	13.2	
9.3	25	13.8	55.3	
9.5		17.0	54.0	
9.5		35.7	29.2	
9.5	26	4.5	33.6	
9.5		20.0	14.2	b
10pr.		31.60	2.99	

2381—2440

	10h		+8°	
m	′	″	′	
9.5	27	11.8	37.5	
8.5		17.3	48.3	K
9.5		58.4	0.4	
8.7	28	47.5	55.8	K
9.5	29	54.0	23.5	
9.3	31	0.8	54.6	b
8.4		20.3	6.7	B
9.5		32.0	29.7	
8.6		53.7	9.8	K
9.0		58.0	34.1	
9.3	32	39.2	29.6	
9.5	33	0.0	29.2	
9.5		15.0	51.7	
9.3		57,6	58.4	
8.8	34	30.7	15.7	B
9.3		39.2	29.6	
9.5		49.7	8.6	
9.5	35	28.0	11.6	
9.5		34.5	44.7	
9.5	36	23.7	20.6	Rb
9.5		28.0	24.1	R
9.3		34.4	59.5	
9.5	37	7.4	30.9	αB
9.3		28.3	54.8	
9.5		33.2	26.0	
9.5		84.7	58.7	
9.5		36.8	2.5	
8.6		51.0	44.9	L
8.0		59.3	16.7	K
9.5	38	15.8	2.1	
9.5		21.5	58.4	
9.0		27.7	44.5	
9.5	39	37.0	7.6	
9.1	40	14.7	19.5	ab
9.5		31.6	40.5	
9.0		42.8	31.7	B
9.5		47.0	1.3	
8.2	41	9.1	59.4	K
9.5	42	40.0	19.0	
8.5	43	54.6	42.3	B
9.5	44	21.0	41.0	
8.0		38.0	14.2	P
8.3		50.1	59.5	R
8.9		56.9	15.6	B
9.5	45	21.5	44.3	
9.5		33.0	29.2	
9.5	46	27.0	41.7	
9.5		43.0	47.2	R
9.3		45.0	23.8	K
9.5		50.0	49.6	
9.3	47	30.0	21.4	
9.5		32.5	44.0	
8.2	48	24.0	28.5	L
8.0	49	0.3	9.9	K
9.1		3.5	2.8	α
*9.2		6.2	53.5	R
9.2		56.1	48.2	αBb
9.2	50	5.5	15.9	K
9.5		18.7	46.9	
9.5		21.0	57.7	
10pr.		31.42	3.13	

2441—2500

	10h—11h		+8°	
m	′	″	′	
9.5	50	29.0	31.9	
9.5	51	13.0	46.7	
9.5		27.0	43.9	
9.2		34.6	11.5	αB
8.3	52	1.7	0.8	K
9.0	53	23.7	24.4	
9.5		53.8	57.8	
9.5	54	38.1	12.7	
9.1	55	2.5	55.2	K
9.5		7.2	24.0	
9.1		42.1	58.4	K
8.2	56	9.6	22.3	K
9.3		44.4	57.1	K
9.5		56.0	36.8	
5.2	57	33.0	7.6	K
9.0	58	35.7	6.3	B
9.5		44.3	38.4	
8.9	59	19.8	54.7	L
9.5		30.5	44.6	
9.2		50.5	19.0	K
9.5	0	45.6	23.9	αB
8.1		56.6	25.2	K
9.2	1	33.1	43.9	K
9.0	2	11.7	17.2	K
8.0		59.3	40.9	K
9.5	3	28.0	42.0	
9.2		35.8	49.3	K
9.5	4	2.7	28.4	α
9.5		9.5	20.2	αB
9.5		30.5	37.0	
9.2		33.3	58.7	K
9.5		54.9	37.7	
9.4	5	56.3	31.1	αB
9.5	6	5.5	7.4	
8.5		6.5	43.7	K
7.0		31.3	50.5	K
9.5	7	42.0	42.1	
9.4	8	5.7	34.7	αB
9.3		21.4	55.1	K
9.5		32.5	40.5	αB
9.5		33.0	2.4	
9.5		57.8	23.7	
9.5	9	23.0	12.2	
9.5		37.2	31.9	
9.3		39.5	0.7	
9.5	10	17.6	55.8	
9.3	11	12.3	56.2	
9.3	12	6.0	22.0	K
9.5		14.0	1.3	
9.0		25.5	22.5	
9.5	13	53.3	18.8	
8.2	14	10.1	1.0	K
9.5		11.0	39.0	R
9.5		25.2	21.2	αB
9.5	15	47.0	44.7	
9.5	16	9.6	0.2	B
9.5	17	34.6	41.0	R
8.2		54.3	45.3	K
9.5		56.5	33.8	
9.0		56.9	54.2	K
10pr.		31.20	3.24	

2435h
9.5 | 49 6.0 | 10.7

2501—2560					2561—2620					2621—2680					2681—2740					2741—2800				
	11ᵐ		+8°			11ᵐ—12ᵐ		+8°			12ᵐ—13ᵐ		+8°			13ᵐ		+8°			13ᵐ		+8°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
8.8		18 8.0	49.4		9.5		55 1.4	32.4		8.2		27 44.4	13.8	K	9.5		3 54.9	35.5		8.9		31 37.9	58.2	K
9.5		12.1	33.3		8.2		10.0	53.0	K	9.3		28 56.4	42.4		8.4		4 14.6	11.0		9.5		59.3	26.2	
9.5		41.9	2.3		8.7		19.1	38.1	K	8.5		29 28.0	43.7	K	9.5		27.0	51.9		9.5		32 7.8	50.2	
9.0		42.3	12.1	K	9.5		56 14.7	20.3		9.3		30 19.0	13.4		9.2		5 37.8	1.8	*b*	9.5		12.3	44.6	
9.0		19 0.1	53.8	K*b*	9.5		15.6	42.9		8.8		32 1.6	22.3	K	9.5		6 12.9	47.2		9.5		40.0	6.1	
9.5		30.9	5.9		8.5		54.3	12.4	K	8.5		33 14.1	30.3	K	9.3		59.2	44.4		9.0		34 3.3	21.7	
9.4		20 5.0	26.5	K	9.5		57 6.7	14.1	*a*	9.5		21.0	55.2		9.0		7 8.2	28.1		9.2		26.8	20.6	
8.8		18.0	41.8	K	9.3		50.9	58.3		9.5		34 11.0	28.8		8.7		52.5	58.4	K	9.5		35 2.4	9.7	
9.5		28.2	36.2		9.5		58 17.4	56.3		9.5		12.3	6.7	*B*	8.7		8 3.7	15.5	K	9.0		6.3	42.9	K*b*
9.5		42.0	9.7		9.0		59 16.5	19.3		9.0		15.8	35.5	K	7.0		31.0	43.8	K	9.3		9.0	54.1	
9.5		56.8	6.5		9.3		27.7	8.5		9.5		28.0	8.3		9.0		58.4	24.0		9.3		28.5	12.7	*a*B
7.5	22	13.5	23.6	K	9.5		0 45.8	12.8		9.0		28.0	9.3	K	9.0		9 32.9	54.4		9.5		46.1	58.7	
9.1		16.2	0.7	K	9.0		2 21.1	58.5	K*b*	9.5		33.0	13.5		9.2		10 19.5	35.2	*b*	9.5		47.7	49.2	
9.3	24	8.0	22.7	*a*	9.3		3 16.5	26.2	K	8.0		56.2	50.8	K*b*	9.5		30.8	29.1		9.0		58.7	2.3	P
8.0		11.7	40.2	K	9.5		39.5	4.0		9.5	36	4.9	52.2		9.5		11 30.2	22.3		9.0	36	14.3	25.1	K
9.5		45.4	6.4		8.5		4 7.1	10.7	K	8.5		28.0	21.7	K	9.1		37.0	43.5	*a*	8.7		24.8	12.9	K
9.5	25	31.5	29.5		8.8		6 14.8	46.3	K	8.8	37	4.7	47.5	B	9.5		52.2	29.0		9.4	38	10.0	40.9	
8.3		39.6	13.2	K	8.8		38.1	46.4	K	9.5		40.0	44.8		9.4	12	15.7	40.3	K	9.5		14.7	35.5	
9.2		48.6	0.8	*b*	9.2		57.4	59.9		6.0	38	18.9	27.8	K	9.5	13	38.7	15.8		8.7		14.7	9.3	K
8.3	26	2.7	47.6	K	8.5	7	38.7	20.4	K	9.5	40	16.1	22.3		9.3		47.3	42.4		9.3		35.5	0.5	K
9.3		36.3	21.5	*a*B	9.5		43.0	26.1		9.0	41	8.2	5.2		8.9		55.5	2.7	K	9.4		53.1	47.3	*a*B
9.5		43.2	38.9		9.0	8	27.1	15.5	K	9.3		34.1	20.5		9.4	14	29.8	29.5	*b*	9.5	39	5.8	49.6	*a*B
9.5	27	0.3	4.2		8.0	9	4.8	9.7	K	9.2		41.0	9.1		9.4	15	12.8	25.8		9.2	40	6.3	24.0	
9.5		17.4	54.6		9.3	10	11.5	19.7	*a*B	9.2		47.7	25.9	*b*	9.5		58.1	59.8		9.5		22.3	30.4	
9.0		50.3	25.9		8.8		18.8	27.7	K	9.5	42	17.0	18.6		9.5	16	19.8	44.4		8.7		39.1	44.4	K
9.0		51.8	41.8	K	8.1	11	5.2	52.3	K	9.1		28.3	0.9	K	9.5	17	8.3	51.0		9.0		54.0	32.8	
9.5	28	22.0	52.2		9.4	12	22.3	49.9	*a*B	9.5		47.0	53.6		9.4		22.9	42.5		7.5	41	20.7	41.5	K
9.0		36.7	8.3	K	9.4	13	43.0	41.2		8.6	43	16.9	53.7	K	9.5		55.8	40.9	*b*	9.3		45.3	30.7	
9.4	29	38.6	58.8		8.7	14	5.6	38.3	K	9.5		20.3	19.0		9.5	18	53.6	59.2		9.3		48.9	5.4	
9.3		47.1	18.6		8.9		11.1	31.1	K	8.3		31.4	53.7	K	9.4	19	9.6	10.0		9.1	42	0.8	13.3	*a*
9.5	30	13.3	8.3		9.5		31.0	55.4		9.0		47.6	13.4	L	8.5		26.4	13.2	K*b*	8.9		17.8	20.3	
6.1	31	0.0	56.2	K*b*	9.0		45.3	22.7	K*b*	8.3	44	35.8	42.4	K	9.5		44.4	6.2		9.5		34.8	35.2	
9.0		18.5	12.0	K	8.7	15	8.9	51.4	K	9.5	45	7.9	12.9		9.0	20	51.0	24.3	K*b*	9.5		53.8	17.8	
9.5	34	33.0	38.4		9.5	16	5.0	8.7	*B*	8.6		10.7	0.4	K	9.0	21	39.5	12.8	K	9.5	43	4.3	20.3	
9.3	35	3.3	1.4	*ab*	9.5		9.5	0.6		9.5		25.2	1.2		9.5		50.3	38.7		9.5		24.8	48.3	
9.3		47.1	46.6		9.5	17	8.9	23.4		9.0	47	26.1	2.8		9.1		56.8	31.6	*a*B	9.5		26.2	6.8	
9.0	36	12.9	28.5	K	9.5	18	1.9	5.2		9.2		50.5	40.3	*b*	9.4	22	34.7	9.1	K	9.5	44	38.4	0.3	
9.3	37	13.0	49.8	*a*B	9.3		15.4	23.0	*B*	9.3		58.0	38.7		9.5		43.3	50.9		9.5		39.1	44.8	
9.0		42.4	38.5	K	9.5		36.1	52.8		9.3	49	24.8	20.0	K	9.0	23	4.3	37.3		9.4	45	56.3	38.4	*b*
8.5	38	29.9	34.8	K	8.0	19	10.0	42.4	K	9.5	50	10.8	38.4		8.2		7.1	8.7	K	9.5	46	16.3	37.6	
9.0	39	42.2	49.2		9.5		25.2	13.3		9.2		43.2	22.1		8.5		13.3	13.7	K	9.5		20.8	54.4	
9.3	40	45.5	4.7	*b*	8.1		57.2	2.7	K	9.5	51	2.4	42.1		9.5		21.3	32.8		8.2	47	11.3	15.1	K
9.0	42	23.4	34.7		8.5	20	1.3	11.6	K	9.1		8.6	5.6	*ab*	9.2		28.4	49.9		9.5		22.6	39.1	*a*B
8.6		25.0	19.0	K	8.2		4.5	49.0	L	9.5		27.3	15.2		9.2	24	9.1	48.7	K	9.5		26.0	6.8	
9.5	44	6.8	0.8		9.2		38.4	44.4		8.2		51.5	41.9	K	9.5		31.3	10.5		9.1		31.8	57.4	*a*
9.4		8.1	14.9		9.5		52.5	32.0		8.8	53	0.6	59.2		9.0		45.0	36.3		8.5		35.9	23.4	K
9.3		9.6	37.7		[illegible]	22	25.2	48.7		9.5		6.0	46.0		9.5		52.8	56.8		8.9	48	17.0	27.6	B
8.9		57.8	21.5	K	9.5	23	53.0	45.5		9.5		22.4	26.4	*a*B	9.5	26	14.3	31.0		9.0		18.1	51.2	
8.7	45	19.9	25.6	K*b*	6.5		59.5	23.7	K*b*	9.5		59.0	46.0		9.5		22.7	8.2		9.0		23.8	39.3	
9.0	49	6.4	6.3	K*b*	9.5	24	11.5	36.2	*B*	9.4	54	3.4	35.7	*a*B	9.5		43.8	42.1		8.4		39.8	11.9	K
9.4	50	11.0	20.8	*a*B*b*	9.5		24.7	6.1		9.5		17.2	44.2	K	9.0	27	4.7	48.5		9.5	49	32.8	35.6	
9.2		42.3	21.8	*b*	9.5		44.1	33.2		8.4		50.2	3.8	K	9.5		49.3	14.0		8.7		56.7	51.9	K
9.5	51	11.2	56.9		9.4		49.2	26.9	K	9.3	55	53.0	57.8		9.5	29	14.2	25.5		9.5	50	45.8	40.7	
9.3		39.3	8.3		9.0	25	46.1	2.8	K	9.2	57	33.8	54.4	K*b*	9.5		17.8	42.8		8.0		49.3	9.5	K
9.2		42.3	23.4	*b*	9.5		58.4	8.3		9.3	58	13.8	0.2		9.5		47.3	31.0	*b*	9.5	51	0.9	49.6	
9.5	52	28.5	37.1	*a*B	7.5	26	3.5	44.9	K*b*	9.5		27.4	58.4		9.3		53.6	53.1	K	9.5		9.6	26.5	
9.2		59.7	45.0	K	7.1		12.8	28.4	K	9.0	59	50.4	31.9	K	9.5		58.1	56.7		9.5		13.8	1.5	
9.3	53	33.8	52.3	*a*	8.6		13.0	5.3	K	9.5	0	58.6	32.5		9.5	30	10.8	51.5		9.5		16.3	31.0	
8.7		35.6	43.4	K	7.1	27	8.9	31.6	K	9.5	2	31.3	57.4		9.2		27.3	59.1	K	9.5		40.2	8.8	
9.5		49.0	9.9		9.2		38.7	13.7	K	8.4		39.4	13.7	L	9.5		47.8	37.2		9.0		44.9	0.2	K
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.98	3.31		10pr.		30.60	3.33		10pr.		30.34	3.25		10pr.		30.04	3.14		10pr.		29.85	3.02	

2602ᵐ				
9.1	20	0.6	11.0	B

2801 — 2860

	13ᵘ—14ᵘ	+8°	
m	′ ″	′	
9.5	51 52.8	51.6	
9.0	53 12.8	30.7	
9.3	48.1	45.4	b
9.5	54 21.0	45.7	
9.5	22.8	30.0	
9.4	24.5	15.5	B
9.5	49.7	40.2	
9.5	55 20.3	35.7	
8.5	56 24.9	49.3	
7.0	25.2	14.0	K
9.4	39.4	9.2	α
9.5	47.4	3.6	
8.7	57 37.2	51.5	K
9.2	58 13.8	43.3	K
9.5	59 3.3	4.2	αB
8.7	0 43.8	47.3	K
9.4	1 4.7	11.7	α
9.2	7.3	40.6	K
9.4	25.2	5.9	α
9.5	38.7	51.0	
7.4	59.7	5.0	Kb
9.2	2 37.8	48.3	
9.3	47.7	1.7	K
9.0	4 30.7	2.2	K
9.5	42.5	12.4	
8.5	47.3	33.3	K
8.0	5 37.5	41.7	K
9.5	6 5.4	27.6	
8.0	59.3	33.7	K
9.5	7 19.8	24.5	
8.7	44.7	42.3	K
9.5	8 15.2	39.9	
9.5	36.3	49.0	
9.4	47.0	5.1	
9.2	9 13.2	37.8	
9.5	42.9	56.2	
9.5	55.1	9.3	
9.5	10 42.3	59.0	
9.5	11 50.3	22.1	
9.0	52.7	45.5	
9.0	56.9	2.9	L
9.3	12 22.7	16.6	
9.3	23.3	51.7	
8.6	13 8.4	57.1	K
9.3	36.8	29.1	b
9.3	14 16.0	12.7	
9.2	32.9	2.7	
9.5	33.5	56.7	
9.5	46.3	48.2	
9.5	59.2	54.9	
9.0	15 13.2	39.6	
9.1	24.6	58.1	α
9.5	41.3	44.4	
8.9	55.2	9.2	K
9.2	16 33.3	16.9	
9.3	51.0	41.6	
7.0	53.1	54.4	K
7.3	17 12.7	44.8	K
9.5	20.3	19.4	
9.0	57.9	53.2	K
	+	—	
10pr.	29.66	2.83	

2861—2920

	14ᵘ	+8°	
m	′ ″	′	
8.6	18 7.7	50.4	K
8.8	14.8	34.0	
9.0	19 12.8	18.3	Kb
9.3	28.3	11.7	K
9.5	20 41.2	4.5	
9.4	52.3	33.6	
9.5	22 39.8	47.9	
7.7	23 2.3	59.7	K
9.2	24 2.5	58.5	K
9.5	15.3	48.9	
8.6	34.0	57.0	K
9.3	47.8	52.5	
9.5	25 53.3	45.1	
9.5	26 1.8	21.5	
9.5	10.7	22.1	
9.5	12.8	33 7	
9.5	25.0	57.5	
8.4	33.9	57.3	K
9.5	41.1	57.4	
9.1	51.1	11.0	K
9.2	57.8	16.2	K
9.5	27 6.8	18.0	
8.6	12.2	10.1	K
9.5	27.2	4.2	
9.5	31.3	13.0	
9.5	57.0	1.4	
9.3	28 5.8	44.9	
9.5	10.8	51.8	
8.8	27.3	39.3	
9.5	49.2	58.2	
9.5	56.7	48.6	
9.4	29 8.3	29.8	
9.5	30 18.9	3.9	
9.5	37.7	23.6	
9.1	31 9.1	10.1	α
9.4	19.4	50.9	
8.7	41.0	32.5	K
9.5	50.3	47.5	
9.1	32 26.4	2.4	Kb
9.4	33 51.3	36.8	
9.5	34 23.2	14.5	
9.5	24.9	55.1	
5.5	32.6	47.0	K
9.4	57.9	33.7	
9.0	35 5.2	42.7	L
9.3	12.8	16.6	
9.3	46.0	1.8	
8.0	48.6	42.7	L
8.2	49.6	15.5	K
9.4	36 42.3	20.5	
9.5	37 14.9	45.2	
9.2	24.0	56.8	
8.3	41.2	19.3	L
7.5	38 30.2	46.9	Kb
9.5	49.9	43.3	
9.5	39 27.6	45.2	
9.5	36.6	29.1	
9.4	55.7	4.5	
8.7	58.7	49.4	L
9.5	41 7.2	56.0	
	+	—	
10pr.	29.51	2.66	

2921—2980

	14ᵘ—15ᵘ	+8°	
m	′ ″	′	
9.5	41 26.9	18.7	
9.5	54.6	17.2	
8.6	59.6	32.6	K
9.5	42 7.6	25.3	
7.5	37.8	35.7	K
9.5	43 11.5	6.2	
9.3	44 28.6	21.1	K
9.5	39.5	12.0	
9.4	43.2	38.5	
9.3	54.6	48.6	b
8.2	45 32.9	23.1	L
9.5	46 16.9	15.3	
9.0	27.2	16.6	K
9.5	46.4	48.8	
9.2	50.6	16.2	K
9.5	47 4.1	30.2	
9.4	8.4	57.5	
9.2	15.2	15.5	
9.4	46.1	2.0	
9.5	48 12.2	29.8	
7.7	20.6	21.4	K
9.5	41.6	53.9	
9.5	49 1.3	0.4	
8.7	23.9	16.5	K
9.2	34.2	36.5	αK
9.5	36.9	21.1	
9.2	41.5	5.5	K
8.5	50 39.6	14.8	K
8.7	41.9	50.9	
9.5	56.6	58.4	
9.5	51 4.6	27.4	
9.5	31.9	45.9	
9.5	52 16.2	16.2	
9.0	57.1	49.2	K
7.3	53 12.6	13.3	K
9.5	14.4	41.0	
8.5	16.6	19.6	K
9.5	28.5	4.3	
9.5	54 57.3	3.2	
9.5	58.4	31.0	
9.4	55 29.8	24.8	
9.4	37.9	32.7	
8.0	43.4	28.5	Kb
9.5	59.9	30.6	
9.1	56 3.9	13.5	K
9.5	10.8	8.0	
9.5	53.9	43.9	
9.5	57 18.3	4.9	
9.5	27.4	44.2	
9.2	28.4	22.9	b
9.5	36.8	7.8	
9.5	42.1	9.0	
9.5	58 49.9	23.6	
9.6	59 20.0	16.3	
9.5	37.0	11.7	
9.5	45.3	4.7	
9.2	1 4.8	54.4	K
9.5	52.4	51.2	
9.2	2 6.9	54.2	K
8.8	18.4	29.8	K
	+	—	
10pr.	29.37	2.45	

2981—3040

	15ᵘ	+8°	
m	′ ″	′	
9.5	2 23.8	3.1	
9.4	25.5	19.4	
9.5	29.8	8.1	
9.5	44.3	6.2	
9.5	50.9	1.5	
9.2	53.0	23.7	αB
9.5	3 9 9	38.3	
9.1	48.4	37.2	α
9.4	58.1	36.7	
9.3	4 34.9	10.0	R
9.3	5 16.4	28.5	
8.8	21.4	58.9	K
9.5	22.4	32.0	
9.0	6 2.9	34.0	K
9.5	8.4	52.8	
8.9	15.9	47.0	K
9.0	36.9	13.5	K
9.5	7 54.4	43.9	
9.4	8 34.8	57.2	
9.5	39.0	8.6	
9.5	56.9	36.2	
9.5	9 11.9	23.6	
9.4	46.0	47.7	b
9.5	10 20.9	11.8	
8.1	32.4	22.6	K
9.5	11 5.4	50.6	
9.3	19.7	3.5	
9.5	12 8 9	22.5	
9.5	13 2.9	30.3	
9.5	44.4	18.9	
8.7	47.4	12.7	K
9.5	57.1	0.5	
9.4	14 11.4	12.1	
9.5	30.4	25.6	
8.8	35.6	58.5	K
9.5	43.5	49.7	
8.7	15 17.9	19.5	K
9.5	53.1	9.0	
9.5	16 21.4	44.0	
8.8	23.2	9.3	K
9.5	17 5.0	1.8	
9.0	15.4	59.4	K
8.0	17.5	59.9	K
9.3	19.8	46.8	
9.5	21.8	52.1	
8.0	52.9	17.7	Kb
9.3	18 0.4	30.5	
9.0	21.4	22.6	
9.5	19 9.9	23.6	
9.5	12.7	1.4	
9.0	19.6	53.0	
9.5	42.6	29.6	
8.7	20 10.8	58.6	K
9.5	44.4	55.0	
9.4	21 43.7	21.5	B
9.5	56.4	16.0	
9.4	23 7.3	35.9	B
9.2	32.4	13.9	
9.0	24 15.4	57.1	K
8.2	35.9	18.1	K
	+	—	
10pr.	29.23	2.22	

3041 — 3100

	15ᵘ	+8°	
m	′ ″	′	
9.4	24 39.3	28.2	αB
9.5	46.9	48.0	
8.6	25 3.4	53.9	K
9.3	17.6	3.9	
9.4	26.3	58.2	
9.5	39.5	50.5	
9.2	26 3.4	17.7	b
9.5	41.4	37.2	
9.5	27 49.4	1.4	
9.5	49.9	28.2	
9.5	28 10.9	47.0	
9.5	37.9	29.9	
9.5	46.6	15.5	
9.1	29 3.1	6.9	α
9.4	25.4	12.1	
9.4	30 16.6	5.1	
9.0	23.5	0.1	
9.5	31 25.4	56.7	
9.5	32 27.0	8.4	
8.5	51.1	59.7	K
9.5	55.9	51.8	
9.5	33 39.4	28.5	
9.4	49.4	15.2	
9.5	34 52.4	54.0	
9.4	57.4	46.0	
7.5	35 10.9	17.3	L
9.0	39.6	20.8	
9.0	40.8	17.7	
9.5	56.2	8.3	
9.3	59.4	38.6	
9.0	36 4.4	30.2	
9.5	53.9	38.6	
8.5	54.8	3.6	
9.5	37 5.5	43.4	
9.1	9.1	35.8	α
8.4	29.7	34.3	K
9.1	38 1.6	20.9	K
9.5	27.0	1.2	
8.9	30.8	23.5	K
9.5	52.5	47.3	
8.3	39 37.4	49.3	K
9.2	50.6	19.7	
9.5	40 49.3	34.1	
9.5	41 46.2	19.4	
9.5	53.8	32.0	
8.9	42 6.5	46.6	K
9.5	24.3	40.0	αB
9.1	30.4	21.9	α
9.2	30.7	51.8	
9.4	43 5.2	40.0	
9.5	10.5	15.7	
9.4	10.6	32.1	
9.3	15.0	8.1	
9.5	19.3	27.6	
9.4	58.7	51.6	
8.8	44 9.2	18.5	K
9.5	26.6	29.4	
9.3	34.5	33.9	
8.9	47.7	17 5	K
9.2	45 19.1	59.5	K
	+	—	
10pr.	29.10	1.97	

3101—3160

	15ᵐ—16ᵐ	+8°	
m	′ ″	′	
8.8	46 7.1	47.8	Kb
9.5	22.0	53.2	
9.4	47 25.0	58.8	
9.1	38.6	7.0	a
9.0	48 14.1	39.3	
9.4	42.8	35.0	
9.5	49.4	58.4	
8.0	49 4.3	21.4	K
9.0	11.3	45.0	
9.5	24.2	33.9	aB
9.5	58.2	12.7	
9.0	50 11.4	12.8	
9.5	11.8	47.5	
9.5	43.7	17.6	
9.4	51 44.5	39.1	B
9.4	55.0	40.0	aB
8.8	56.0	59.4	K
9.2	52 5.8	32.1	
9.5	34.2	46.8	
9.5	37.4	26.2	
8.8	56.7	50.2	
9.3	53 3.7	15.2	aB
8.8	24.6	25.1	
9.2	42.8	33.2	
9.5	45.2	2.2	
9.3	54 28.1	47.1	
9.3	55 19.0	50.9	
8.8	45.3	22.3	B
9.5	56 47.0	11.0	
8.1	49.6	37.5	Kb
8.2	57 9.7	33.2	K
8.6	29.0	3.8	L
8.7	49.0	42.5	K
6.8	58 36.2	30.0	K
8.7	59 11.4	59.9	K
9.3	36.9	13.4	aB
8.8	49.7	2.9	
9.2	57.1	13.9	aB
9.2	0 20.5	54.8	
9.5	21.3	29.4	aB
6.4	1 29.3	55.8	K
9.4	32.0	7.1	
8.8	2 11.7	15.7	Kb
9.5	23.4	39.5	
9.5	33.0	4.9	
9.5	54.1	55.1	
9.3	3 2.1	23.3	R
8.9	46.4	10.2	K
9.5	56.4	30.8	
9.5	4 42.9	37.9	
8.6	58.0	7.3	K
9.1	5 4.1	34.5	ab
9.5	57.6	50.3	
9.5	7 3.8	12.6	
9.2	16.2	51.5	K
9.3	18.5	20.3	
9.5	34.9	28.0	
7.0	40.6	14.1	Kb
9.5	8 2.0	27.8	
9.5	13.3	25.4	
	+	−	
10 pr.	29.00	1.71	

3161—3220

	16ᵐ	+8°	
m	′ ″	′	
9.1	8 17.6	50.1	a
9.2	57.5	39.9	
9.5	9 8.1	32.9	
9.3	18.0	18.4	
8.0	23.5	24.2	L
9.5	32.7	34.7	
8.5	37.5	4.3	K
9.5	49.0	55.6	
9.4	10 13.5	48.5	
7.8	36.0	4.9	K
8.7	11 35.7	59.1	K
9.5	40.8	54.1	
8.8	59.9	33.1	
9.0	12 16.7	38.5	
9.5	55.8	49.6	
9.3	13 32.3	23.2	
9.1	32.7	12.6	ab
8.8	56.8	57.4	K
9.0	57.0	51.5	K
9.3	14 6.9	54.4	
9.4	37.4	33.7	aB
9.5	43.7	3.2	
9.5	47.2	28.5	
9.0	15 10.8	4.7	
9.5	16 28.1	53.4	
9.3	42.3	21.0	
9.2	17 31.0	20.5	aB
8.3	50.5	59.6	K
8.6	18 0.3	31.0	K
9.0	22.9	15.4	
9.2	19 6.6	22.9	
9.5	10.0	44.4	
9.5	10.1	33.2	
7.7	15.6	50.6	K
8.8	35.3	16.7	K
9.5	47.8	32.4	
8.9	50.6	42.9	
9.2	20 7.0	9.0	
9.5	34.8	24.7	
9.5	52.7	30.9	
9.3	21 8.2	44.0	
8.9	13.0	8.1	K
9.2	20.9	10.3	K
8.7	38.9	30.7	L
8.2	50.4	43.7	K
9.5	22 2.4	43.9	aB
9.5	3.3	40.9	aB
9.5	41.2	22.9	aB
8.8	44.4	31.1	K
7.3	46.7	3.9	K
9.2	23 38.7	3.7	K
9.5	41.4	45.4	
9.5	48.7	28.5	
9.5	24 6.1	50.6	
7.7	31.2	37.4	L
9.0	34.9	37.4	L
9.0	53.8	45.1	
9.0	25 18.8	33.1	
9.0	50.1	13.1	
9.3	26 21.5	22.4	
	+	−	
10 pr.	28.91	1.43	

3221—3280

	16ᵐ	+8°	
m	′ ″	′	
9.5	26 24.8	49.6	
8.9	29.7	19.5	Kb
9.5	27 9.3	16.0	
9.2	11.3	56.8	K
9.4	14.6	0.3	
9.5	23.0	30.9	
9.5	28.2	20.6	
9.5	30.4	10.6	
7.5	31.6	59.3	K
9.4	33.8	36.4	
9.5	28 1.9	10.5	B
9.4	4.8	42.2	
9.5	20.3	20.6	
9.5	22.5	14.3	
8.7	22.6	57.3	L
9.5	27.7	44.5	
9.5	30.7	47.3	B
9.2	39.6	45.2	K
9.5	54.4	51.0	
9.5	29 0.2	59.3	aB
9.2	30 12.5	24.5	aB
9.3	16.0	49.7	
9.5	54.9	18.0	
8.8	31 1.7	9.0	Kb
9.5	17.7	10.1	
8.8	35.3	3.8	K
9.5	47.0	57.4	
9.0	32 8.9	37.5	K
9.5	21.7	23.6	aB
9.3	28.4	44.1	
9.2	46.5	43.1	
9.4	51.4	10.8	
9.5	33 53.4	17.7	
9.5	34 1.8	42.6	
9.5	20.1	44.3	
9.3	31.9	14.3	
9.5	52.6	40.1	
8.6	35 10.0	40.9	K
9.5	36.0	4.8	
9.1	39.9	37.3	ab
9.3	55.2	33.2	
9.5	36 8.3	57.2	
9.3	20.7	55.5	
8.9	50.9	51.8	
9.5	37 25.3	6.0	
9.4	35.8	10.3	
9.0	59.1	4.2	K
9.0	38 36.4	19.8	
9.5	44.6	1.5	
9.1	47.5	50.0	K
5.6	53.2	50.5	K
9.4	39 4.8	29.3	aB
9.0	23.1	26.7	
9.5	39.8	32.7	
9.2	48.8	37.5	
9.5	40 33.6	7.5	
9.4	41 3.9	23.9	aB
9.3	15.1	18.6	
8.3	17.4	39.5	B
9.3	58.1	37.5	
	+	−	
10 pr.	28.86	1.24	

3281—3340

	16ᵐ	+8°	
m	′ ″	′	
9.5	42 23.1	52.1	aB
9.1	26.8	23.2	a
9.1	38.3	13.2	ab
9.5	45.9	4.1	
8.5	43 17.5	24.8	P
9.0	44 8.1	37.5	
9.5	20.1	28.5	
9.5	47.8	31.7	
9.5	45 12.9	45.6	
9.5	36.1	31.0	
9.5	57.4	2.0	
9.0	46 21.1	20.1	
9.5	30.8	34.5	
9.0	31.3	51.4	
8.8	41.1	14.2	
9.5	47 0.7	3.4	
9.5	2.0	17.4	
8.2	6.3	39.7	Lb
9.5	33.9	1.2	
9.3	38.0	56.2	
9.5	48.1	22.0	
9.5	48 13.2	57.8	aB
8.8	35.2	27.2	K
9.5	47.6	2.6	
9.5	49 6.7	50.2	
9.1	18.7	58.4	K
9.5	25.2	2.8	
9.5	32.4	32.1	aB
9.2	36.8	59.0	B
9.0	50 42.3	31.3	
9.5	53.7	34.8	
9.1	51 10.2	24.3	aB
9.4	15.8	45.6	aB
9.5	44.5	41.9	aB
9.4	48.9	28.4	
9.3	49.0	58.0	
9.0	52 6.5	21.5	B
9.1	10.8	4.5	a
9.5	15.3	21.5	B
9.5	21.8	20.8	aB
9.2	33.5	26.0	
8.2	36.4	14.2	K
9.5	53 10.3	54.3	
9.2	12.7	27.5	
8.2	20.1	13.5	Kb
9.5	22.2	47.8	
9.5	27.8	9.9	
9.3	44.3	18.6	K
9.4	54 1.7	55.0	aB
9.2	8.3	48.8	
9.5	12.0	57.8	
8.8	25.7	2.6	
9.1	27.8	23.4	a
9.5	31.2	31.5	
8.8	44.4	2.8	
9.3	53.0	0.0	
6.5	55 1.7	39.4	K
9.4	30.7	5.5	B
9.5	56 48.4	8.3	
9.5	57 13.3	44.2	
	+	−	
10 pr.	28.81	0.99	

3341—3400

	16ᵐ—17ᵐ	+8°	
m	′ ″	′	
9.5	57 39.2	54.0	
9.5	43.8	9.9	
9.3	58 15.8	14.1	
8.8	25.2	35.2	Kb
9.5	44.8	12.0	
7.7	59 1.4	4.1	L
7.0	12.2	49.2	K
9.2	31.0	50.2	K
9.5	0 3.8	11.9	
9.3	12.1	11.7	
9.3	14.8	3.7	aB
9.2	34.4	14.1	
8.8	42.3	27.3	K
8.5	1 14.4	20.4	K
9.1	15.8	37.7	a
9.0	25.7	26.5	K
9.1	57.8	32.5	a
9.5	2 13.4	48.9	
8.9	23.3	8.7	B
9.5	30.2	10.6	aB
9.3	47.5	0.5	
9.5	54.3	38.4	
9.4	3 41.8	30.4	
9.3	4 2.7	14.1	
9.5	2.8	23.1	
8.7	37.2	48.2	L
6.2	45.7	4.9	K
9.3	5 19.1	26.1	aB
9.0	23.3	10.2	K
9.3	6 2.7	57.1	aB
9.0	21.8	5.1	K
9.5	35.8	51.8	B
9.4	7 33.7	2.4	
9.3	8 10.3	32.1	K
9.5	33.3	55.4	
9.5	35.8	49.9	aB
9.3	43.0	0.5	a
9.5	9 53.0	30.3	
9.5	54.5	11.1	
9.0	10 3.3	39.1	
9.1	25.0	12.1	a
8.8	48.4	5.2	
9.5	11 5.8	27.2	
8.7	19.3	34.2	
8.7	28.0	13.0	
9.4	28.2	31.8	a
9.5	28.3	27.5	
9.5	51.5	1.3	
9.5	12 2.8	18.5	
9.0	19.4	59.2	
8.0	13 1.4	7.3	B
9.5	39.7	28.0	
9.4	14 8.0	14.6	aB
9.5	28.0	45.3	
9.2	31.4	28.9	b
9.5	52.3	31.8	
9.4	15 8.6	7.4	a
9.5	26.0	6.4	aB
9.1	36.2	53.7	a
9.5	38.8	20.6	
	+	−	
10 pr.	28.78	0.78	

3401—3460				3461 — 3520				3521 — 3580				3581 — 3640				3641 — 3700			
	17ʰ	+8°			17ʰ	+8°			17ʰ	+8°			17ʰ—18ʰ	+8°			18ʰ	+8°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.3	15 55.8	6.8	K	8.8	32 0.9	3.4		9.0	45 32.6	8.9		7.8	59 55.7	52.4	L	9.5	11 31.2	28.6	
8.5	16 12.2	7.2	K	9.0	24.4	40.8		9.3	43.4	7.5		5.0	0 22.8	43.0	L	8.7	31.3	34.3	K
9.3	51.3	28.3		9.4	33 3.1	30.3		7.7	45.1	41.9	K	9.5	41.4	50.1		9.5	38.2	37.9	
7.5	17 2.7	46.0	K	9.5	5.3	32.8	B	8.8	56.1	57.5	K	9.0	44.4	2.9	K	9.5	59.4	29.1	
6.2	2.9	59.5	K	9.5	27.7	33.2		9.1	58.3	43.7	αB	8.5	50.4	2.3	K	9.5	12 0.4	30.1	
8.5	6.4	16.5	K	9.3	38.6	7.3		9.2	58.4	50.7	B	9.5	54.9	31.8		9.5	3.9	50.2	
9.1	21.8	9.4	α	8.6	38.8	39.6		9.2	46 1.3	44.2	K	9.5	1 12.5	24.9		9.5	4.7	5 5	
9.0	44.0	3.1		9.5	39.6	33.3	αB	9.5	25.1	28.0		9.5	29.8	47.8		8.6	10.2	30.4	Kb
8.6	18 56.8	39.4	K	9.5	45.8	36.4		9.5	47 15.3	25.6		9.5	37.7	39.1		9.5	48.4	25.2	
9.3	19 29.1	32.1	αB	9.5	58.3	32.3		9.5	16.1	59.2		8.8	39.1	59.8	K	9.5	53.8	44.7	
9.3	31.7	39.9	αB	8.6	34 10.1	51.5	K	9.0	17.8	44.9	Kb	9.2	2 4.5	56.5		9.5	13 21.1	45.5	
9.5	33.1	39.8	αB	9.2	31.4	59.3	αB	9.5	48 21.1	14.4		9.5	7.7	20.6		9.5	51.6	44.3	
9.3	34.2	1.8		8.9	53.1	17.7	K	8.6	26.3	55.6	Lb	9.5	8.2	12.7		8.3	52.4	58.8	
9.5	55.3	29.3		9.2	59.8	17.6		8.0	33.1	37.0	K	9.5	24.4	43.3		7.9	14 4.3	34.0	K
9.3	20 3.3	4.6		*9.4	35 22.6	28.0	αB	9.3	49 13.2	24.1		9.5	28.3	49.7		9.4	25.5	15.8	
9.5	27.8	24.5		8.8	36 0.1	8.2	K	9.5	16.2	28.6	B	9.5	33.9	46.0		9.4	34.2	5.6	
9.4	46.6	45.1	α	9.5	18.8	13.8		9.3	23.8	35.6		9.5	51.0	15.9		9.5	35.5	57.6	
7.3	49.4	33.5	Pb	9.2	34.3	30.3	αB	9.5	27.5	54.0		9.4	53.0	34.7		9.1	44.6	57.8	K
9.0	52.7	41.2	B	9.5	36.9	58.8		9.5	33.3	2.0		8.5	3 30.5	48.3	K	9.3	57.3	33.2	
9.3	57.2	14.7		8.6	49.1	41.2	L	9.5	35.1	7.5		9.5	39.2	1.4		9.2	15 1.4	3.7	b
9.5	21 5.8	0.0		9.0	37 28.7	16.7		9.3	54.1	40.1	α	8.6	39.5	26.7	K	9.5	4.7	32.9	
9.5	51.0	20.7		9.0	38.5	38.0		9.3	50 19.0	41.4	αB	9.4	40.0	12.9		9.5	15.8	47.5	
9.5	22 2.3	42.2		9.5	38 10.1	38.0		9.3	29.0	36.9	α	9.5	58.3	32.9		9.0	42.5	31.4	K
9.4	16.8	20.4	αB	9.5	20.1	30.4		9.5	33.0	37.7	αB	9.3	4 2.1	23.7	K	9.2	46.1	42.9	K
8.8	20.7	17.9		9.5	28.0	24.8		9.5	51.5	41.8		9.5	2.9	17.5		9.3	50.7	47.9	
9.3	28.4	41.9	αB	8.8	57.4	5.1	Kb	9.5	52.1	7.9		9.1	16.0	13.0	K	9.1	52.0	49.6	K
9.0	35.2	24.5		8.2	39 0.5	58.4	K	9.3	51 24.1	5.2		9.5	16.5	4.2		9.4	55.2	30.6	αB
9.4	44.4	59.7		9.1	27.8	18.9		9.5	45.8	58.8		9.5	25.7	46.4		9.5	16 8.9	33.9	
9.4	52.5	58.7	αB	9.2	40 2.1	27.2	K	9.0	52 3.8	44.9	Lb	9.4	49.2	41.1		9.5	27.1	38.9	
9.3	55.0	42.1	αB	9.5	19.8	47.3		9.3	19.0	48.6		7.0	5 13.2	11.9	K	9.0	46.1	24.4	K
9.5	56.8	10.7		9.3	19.8	12.8		9.5	21.8	56.5		9.5	32.3	41.8		9.5	49.8	36.3	
9.1	23 15.7	22.3	K	9.2	36.4	36.6	K	9.5	22.8	53.0		9.5	43.0	42.2		9.5	17 2.5	18.8	
9.5	18.9	42.3	B	9.5	51.4	40.8		9.0	29.4	14.8		9.5	43.6	9.5	αB	8.3	5.1	35.4	Kb
9.3	41.8	44.6		9.5	52.9	50.5		9.5	41.5	52.9	αB	9.5	6 6.3	0.3		9.5	13.2	3.8	
9.4	24 32.1	9.1		8.7	41 4.4	11.7	Kb	7.0	53 17.6	51.6	K	9.2	42.7	36.3	b	9.5	18.1	56.0	
8.3	43.3	23.1	K	9.3	15.1	7.9		9.0	22.1	51.6	K	8.7	59.8	12.7	K	9.5	25.0	41.5	
9.3	54.4	57.9		8.6	16.6	5.9	K	9.2	29.6	45.6	αB	9.5	7 3.6	37.2	B	9.5	30.8	30.1	
8.5	55.0	53.3		9.5	48.6	13.8	B	9.5	42.7	6.4		9.5	8.4	56.5		9.5	46.2	48.3	
9.5	25 7.3	4.6		8.7	49.5	29.7		9.5	53.1	38.1		9.1	23.6	50.7	K	9.5	54.0	35.8	
9.4	39.2	44.5		9.5	59.7	13.5	αB	9.3	54 10.8	32.4		9.3	38.4	4.9		9.0	56.3	14.2	K
9.4	26 2.6	0.2	αB	8.4	42 10.1	19.6	K	9.5	33.6	36.1		8.7	58.8	56.2	K	9.0	56.8	24.1	
9.0	2.8	50.2		9.2	19.6	35.9		9.4	34.0	41.4		9.4	8 1.4	31.3	B	9.5	18 3.1	55.0	
9.5	5.7	13.4		9.5	28.2	25.9		9.5	58.4	40.5		9.5	7.3	25.0		9.1	6.9	9.2	α
9.5	16.3	45.6		9.2	29.1	57.8		8.7	55 27.4	10.6	B	8.7	13.6	45.0	K	9.3	17.9	27.6	αB
9.2	32.7	23.8		9.5	45.4	35.6		9.4	42.7	13.5		9.3	15.2	1.6		9.5	22.3	21.9	
2.7	55.2	12.7	L	9.2	43 13.1	16.1	K	9.2	56 5.7	3.7		9.5	17.2	52.1		9.5	43.3	37.0	
8.6	57.4	16.3	L	9.2	38.2	59.2		7.0	24.6	24.9	K	9.5	28.7	38.1		9.5	45.1	41.5	
9.4	58.1	39.0		9.3	53.0	4.5		9.3	28.1	37.0		9.5	29.9	25.0		9.5	19 11.8	45.7	
9.0	27 53.4	11.3		9.5	55.4	47.7		9.5	50.4	19.0		9.4	33.4	30.3		8.0	16.8	42.9	B
9.2	28 18.3	9.4		9.5	58.8	6.6		9.4	58.3	52.2	α	9.5	51.7	38.1		8.7	23.1	23.0	
9.5	18.7	22.7		7.0	44 7.6	35.0	K	*9.4	59.0	59.0	α	9.5	52.3	12.5		9.0	26.4	47.4	B
9.4	36.1	31.1		9.4	16.0	6.8		9.3	57 12.7	51.2	αB	9.2	59.7	5.9		8.5	27.8	32.8	
9.3	29 6.1	42.5	K	9.4	21.5	0.6		9.5	15.2	10.0	αB	9.5	9 34.1	38.4		9.3	29.3	16.9	
9.5	48.2	25.4	αB	9.5	36.2	30.7		9.3	28.6	4.0		7.3	36.9	19.0	K	9.1	39.9	0.5	α
9.3	30 28.4	14.4		9.3	38.7	21.8		9.5	58 15.4	9.7		9.5	50.6	10.5		9.1	48.1	42.2	αB
9.3	31.1	4.1		9.4	47.9	28.6		9.2	25.8	27.6	b	8.5	10 38.9	38.2	R	8.8	49.4	0.9	
8.5	44.8	43.2	K	8.9	50.8	43.9	K	9.5	55.9	29.6		8.6	42.1	45.7		8.8	53.9	6.7	
9.3	57.3	28.3		8.4	45 5.4	22.8	B	9.0	59 17.6	3.6	K	9.5	11 8.0	25.1		9.4	20 5.0	1.1	B
9.0	31 38.4	59.0	L	7.8	12.1	51.9	Kb	9.5	47.4	16.5		9.5	9.6	47.1		9.5	10.3	29.1	
8.6	56.5	48.8	L	9.0	28.1	38.0		9.1	50.0	30.5	α	9.5	20.8	35.0	α	9.2	21.4	55.7	
	+	—			+	—			+	—			+	+			+	+	
10pr.	28.75	0.54		10pr.	28.73	0.29		10pr.	28.72	0.11		10pr.	28.72	0.08		10pr.	28.73	0.24	

3475ᵐ				3571ᵐ			
9.8	35 26.1	5.4	B	9.0	57 2.8	55.0	B

3701—3760

m	18ᵐ	+8°	
9.3	20 37.5	42.6	
9.5	49.2	12.9	
9.5	51.9	3.2	
9.5	21 2.4	25.3	αB
8.7	18.5	42.8	
9.5	25.6	6.6	
9.1	30.2	45.1	α
9.1	57.0	24.7	αb
9.2	22 10.3	10.9	
8.3	15.7	49.4	
9.5	16.5	13.6	
9.0	32.9	7.3	
8.7	34.6	57.8	K
9.4	36.7	22.9	B
9.4	39.7	27.9	
9.3	57.4	26.1	α
9.4	58.0	31.6	
8.3	23 5.8	51.8	
8.8	6.5	58.6	K
9.5	7.1	27.1	
8.5	10.3	6.5	L
9.2	13.2	2.6	
8.7	15.7	45.9	
9.4	17.5	25.1	αB
9.5	34.7	46.6	
9.0	24 10.2	50.1	
9.3	16.5	10.4	
9.5	19.1	13.2	
8.9	23.4	51.3	
9.5	42.7	17.4	
9.5	47.6	52.9	
9.0	56.5	55.1	K
9.5	57.4	42.9	
9.5	25 1.0	54.7	
9.5	20.6	26.0	
9.5	32.5	50.7	
9.4	36.2	11.2	αB
9.5	44.1	15.3	
9.4	51.4	45.3	
9.5	26 24.2	38.9	
6.2	25.3	10.0	L
9.4	27.1	22.6	αB
8.7	31.9	59.2	K
9.0	34.5	1.9	
9.5	35.4	5.3	
9.5	27 7.6	31.6	
9.5	16.8	54.1	
9.5	18.3	39.5	
9.2	21.1	52.0	Kb
9.5	23.9	3.6	
9.5	30.2	46.5	
9.4	32.3	9.6	
9.5	38.8	15.2	
9.5	50.1	47.7	
9.5	56.8	46.7	
9.1	28 0.4	52.7	K
9.3	11.6	58.7	
9.5	30.4	31.7	
9.1	36.7	31.3	K
9.2	38.3	55.4	
10 pr.	+ *28.73*	+ *0.36*	

3761—3820

m	18ᵐ	+8°	
9.5	28 57.1	37.5	
9.1	59.5	50.4	α
9.5	29 0.6	35.4	
9.5	7.6	37.6	
9.4	8.5	27.9	
9.5	17.3	7.0	
9.5	35.1	28.0	
9.5	30 20.4	24.4	
9.5	23.3	19.7	
9.4	25.3	23.1	αB
9.5	36.4	46.6	
9.5	43.0	49.5	
9.2	51.0	19.3	αBb
9.1	54.5	25.7	
9.5	58.0	38.1	
9.5	31 5.9	28.4	
9.5	7.6	52.8	
9.5	19.4	44.8	
9.4	23.8	35.9	
var	26.1	42.3	
9.1	35.8	0.4	K
9.5	43.5	14.0	
9.5	46.1	41.2	
9.5	32 24.6	13.8	
9.5	25.1	49.5	
9.5	32.5	16.3	
9.2	33.8	39.2	K
9.5	37.6	51.4	
9.3	40.1	51.4	
9.5	43.4	19.1	
7.7	43.5	36.9	K
9.5	43.7	20.9	B
9.4	59.4	40.9	
9.3	33 5.5	22.6	
9.4	18.8	16.3	
9.3	25.3	17.7	
7.3	27.0	44.1	K
9.1	45.9	45.9	K
7.5	50.0	39.4	K
9.5	57.7	27.8	
9.4	34 3.0	1.6	
9.5	10.6	32.2	
9.5	13.0	3.0	
9.0	27.0	29.0	
9.3	34.7	53.4	
9.5	36.1	58.5	
9.4	51.8	37.0	
9.0	35 4.5	43.6	K
8.9	25.4	11.0	K
9.2	45.2	49.7	
9.5	46.4	55.6	
9.5	52.5	10.0	
9.5	36 5.7	41.1	
9.4	9.7	42.1	αB
9.3	10.3	8.4	
8.1	19.8	54.0	B
9.5	29.5	33.1	
9.3	37.3	30.9	
7.4	54.2	29.1	L
9.5	57.9	9.4	
10 pr.	+ *28.74*	+ *0.47*	

3821—3880

m	18ᵐ	+8°	
9.2	37 3.4	55.0	
9.4	13.5	43.5	
9.4	14.8	14.8	
9.4	16.9	29.8	
9.5	27.2	54.6	
9.5	27 8	20.2	
9.3	37.0	30.5	
9.5	38.6	49.3	
9.5	42.5	26.6	
9 5	38 8.2	43.9	
9.5	14.9	3.1	
8.6	15.3	49.0	L
9.5	35.5	46.0	
8.7	42.6	48.0	K
var	47.3	34.8	
9.2	48.8	17.1	K
8.5	49.4	20.6	K
9.5	59.7	40.2	
9.5	39 1.7	4.2	
9.5	25.6	30.9	
9.5	54.8	14.9	
9.2	55.8	56.4	
9.5	56.6	53.0	
8.7	40 5.2	47.2	K
9.5	9.1	49.5	
9.5	10.0	52.5	
9.5	13.3	19.5	
9.4	24.1	12.7	αB
9.5	32.5	58.9	
9.4	34.1	53.5	
8.9	41 0.8	7.0	K
9.2	0.8	48.2	
9.0	3.8	31.6	K
8.7	15.2	11.4	K
9.5	38.6	37.9	
9.0	40.0	2.7	Kb
9.3	50.9	50.0	
9.5	42 9.4	49.4	
9.5	14.3	3.1	
9.5	27.1	25.6	
9.5	35.5	13.7	αB
8.8	56.6	21.2	
9.4	43 21.4	13.2	
8.8	28.3	40.4	
9.5	44.8	19.7	
8.4	50.5	32.4	K
8.8	52.1	23.5	K
9.3	58.7	49.5	
8.7	44 8.4	59.9	K
9.4	13.1	51.7	
9.4	26.7	33.5	
9.1	27.5	29.8	α
8.6	45 8.2	58.0	K
9.5	15.0	36.2	
9.5	17.0	32.0	
9.5	17.5	43.1	
9.4	20.3	10.3	
9.4	52.4	0.1	
9.5	55.2	0.1	
8.1	46 4.8	33.0	L
10 pr.	+ *28.75*	+ *0.59*	

3881—3940

m	18ᵐ	+8°	
9.5	46 26.9	52.5	
9.5	31.6	15.5	
9.5	31.6	37.1	
9.5	33.2	38.1	
9.5	33.4	39.1	
9.5	47.5	26.2	
9.5	49.4	44.1	
9.1	47 5.5	47.3	ab
9.5	18.9	19.0	
8.5	20.7	22.3	L
9.5	23.0	1.2	
9.5	23.9	4.2	αB
9.5	24.5	2.7	
9.3	28.3	49.7	
9.2	52.7	45.3	
9.0	57.5	19.4	
9.5	48 13.9	2.7	
9.5	15.3	2.9	
9.2	16.4	21.2	αB
9.5	20.9	23.6	
9.5	39.2	55.5	
9.5	39.5	41.4	
9.5	45.1	38.1	α
8.4	49.0	36.5	K
9.5	56.2	19.6	
9.5	57.0	31.9	
9.5	49 13.1	58.6	
9.5	15.4	11.1	
9.5	15.9	44.3	
8.9	28.8	58.6	K
9.5	37.1	44.6	
9.5	45.7	13.9	
9.5	59.2	18.3	
9.5	50 24.3	51.6	
9.2	35.6	16.7	
9.3	41.8	4.1	
9.2	58.0	23.2	
7.6	51 22.8	21.4	Kb
9.5	24.6	53.0	αB
8.7	31.0	14.3	K
9.4	44.6	20.0	αB
9.5	53.4	29.4	
9.5	58.5	33.8	
8.9	52 5.1	31.3	
9.3	15.3	55.0	
9.5	18.2	13.7	B
9.5	19.2	30.5	
9.5	32.2	15.2	
9.1	40.9	31.3	α
9.5	53 0.1	37.1	
9.4	5.4	20.8	ab
9.3	12.8	38.4	
9.3	14.7	10.9	
9.5	21.3	29.7	
9.1	22.4	21.1	α
9.4	28.3	0.3	
9.5	29.2	3.5	
9.5	32.8	33.8	
9.0	36.5	22.3	
9.2	38.3	6.8	
10 pr.	+ *28.77*	+ *0.72*	

3941—4000

m	18ᵐ–19ᵐ	+8°	
8.5	53 56.2	36.9	
8.5	54 30.9	58.0	K
9.5	38.1	22.2	
8.7	43.2	58.2	K
8.8	46.2	33.0	S
9.0	51.9	55.2	K
9.4	58.2	49.1	
9.3	55 4.8	34.1	
9.0	10.7	33.3	
8.3	12.4	32.9	S
6.5	23.4	10.0	K
9.5	37.6	39.6	
9.0	46.1	13.3	Kb
9.5	50.9	4.0	
9.2	54.2	27.1	
7.8	56 33.7	5.3	K
8.7	45.8	34.1	B
8.4	57 30.9	4.9	K
9.4	46.3	49.8	
8.4	55.0	15.5	L
9.0	58.4	0.4	K
9.5	58 6.0	52.4	αB
9.4	13.9	55.0	
8.7	22.5	33.9	
9.5	30.1	16.5	
9.0	45 0	53.0	
9 4	46.1	49.8	
9.5	59 11.2	0.5	B
9.5	17.0	58.9	
var	23.3	0.8	B
9.2	27.6	28.2	
9.2	30.7	45.1	
8.7	31.7	49.1	
8.6	46.5	55.7	
9.0	54.4	34.2	
9.5	54.8	24.5	
8.7	0 11.3	7.6	K
9.0	15.7	55.7	K
9.2	26.5	45.8	
9.5	34.3	52.6	
9.2	49.8	13.7	
9.5	49.9	21.9	
9.5	1 7.2	55.5	
9.0	11.0	41.7	
9.5	11.6	23.3	
7.8	18.4	45.6	K
8.6	28.0	54.4	K
9.5	55.3	34.6	
9.5	2 18.2	7.9	
9.5	29.2	57.7	
8.9	45.9	18.5	
8.5	3 15.0	27.6	Kb
9.4	36.5	5.0	
9.5	4 3.8	48.2	
8.5	5.9	57.7	
8.0	15.6	15.5	K
9.5	23.5	4.4	
9.5	44.3	37.7	
9.3	52.7	28.4	
9.5	57.4	59.3	
10 pr.	+ *28.79*	+ *0.87*	

4001—4060

	19ʰ	+8°	
m	′ ″	′	
9.5	5 22.9	38.0	
9.3	23.5	56.1	
8.8	26.8	9.2	
8.0	46.5	22.1	K
9.5	6 0.7	4.4	B
9.5	31.8	11.3	
7.3	56.9	48.3	Kb
9.5	7 5.5	5.9	
9.5	7.9	54.4	
9.5	33.3	58.7	
9.5	47 3	50.8	
9.5	58.8	23.7	
9.5	8 12.0	46.5	
9.4	12.3	11.8	
9.5	13.2	16.0	
9.4	30.7	30.8	a
9.5	42.3	25.1	
9.4	51.1	6.6	
8.7	54.3	34.5	Kb
9.0	9 6.0	22.2	K
9.2	7.4	28.4	
9.5	21.3	38.2	
9.2	27.5	56.9	
9.0	29.2	43.0	
9.2	35.3	31.6	aB
9.4	35.3	30.1	
9.5	48.5	11.6	
9 5	48.6	36.7	
9.5	48.6	59.1	
9.5	58.4	15.4	
9.5	10 10.1	36.6	
9.5	22.9	47.4	
9.4	30.0	47.4	
8.8	42.1	21.6	K
8.6	46.0	31.6	
9.5	52.9	50.5	
9.5	55.7	59.2	
9.5	11 1.4	24.6	
9.1	38.8	52.7	a
9.4	43.2	54.4	
9.0	48.4	33.7	
9.0	12 9.6	56.2	
8.5	18.4	49.8	
9.5	24.3	13.3	
9.5	37.7	33.1	
9.3	42.5	26.8	
9.4	54.3	42.6	
9.5	13 6.4	46.9	
9.5	21.7	34.8	
9.5	25.3	24.4	
9.5	25.8	57.6	
*8.5	14 26.9	2.6	L
8.8	36.7	36.2	K
9.4	36.8	57.6	
9.2	44.4	55.7	
9.2	45.8	55.2	
9.2	49.1	25.9	
9.3	50.0	12.8	
9.4	54.7	39.5	
9.5	59.8	5.9	B
10pr.	+ 28.82	+ 1.01	

4061—4120

	19ʰ	+8°	
m	′ ″	′	
9.5	15 13.8	29.5	aB
9.3	43.0	18.6	
9.5	43.3	51.2	
9.2	45.3	4.8	
7.7	54.2	20.1	K
9.3	55.0	16.6	
8.7	59.9	52.7	
9.5	16 3.8	2.0	
9.3	13.4	41.5	
9.5	23.7	53.9	
7.5	34.4	0.5	K
7.5	40.6	23.0	K
9.0	49.7	1.7	K
8.0	59.0	7.9	Kb
9.5	59.1	54.7	
9.2	17 10.5	45.0	
9.3	10.6	48.0	
9.5	11.0	12.6	
9.4	12.9	10.2	
9.5	17.3	29.7	
9.5	18.7	3.5	
9.5	32.8	32.5	
9.5	39.3	55.0	
9.3	41.8	39.4	
9.3	44.1	1.9	
9.5	51.3	32.8	
9.5	52.8	1.9	
9.5	57.0	51.2	
9.5	18 5.2	32.3	
9.4	7.1	44.9	
8.9	27.7	47.5	
9.1	35.8	50.2	aB
9.2	35.8	50.7	aB
8.9	19 1.3	4.1	K
9.5	9.3	9.4	
9.5	18.6	6.9	
9 5	35.7	58.2	
8.9	50.0	44.5	K
9.0	20 2.7	59.4	
9.5	6 5	1.3	
9.5	11.5	47.0	
9.5	15.4	27.8	
9.5	17.0	1.6	
9.5	22.9	54.8	aB
8.6	36.2	53.3	K
8.7	51.3	6.5	
8.0	53.4	40.5	K
9.5	21 9.6	15.4	
7.8	25.2	4.0	B
9.2	28.1	38.2	K
9.4	31.0	58.4	
7.5	37.9	34.2	K
9.5	22 5.2	29.0	
9.0	17.5	44.4	K
9.5	23 0.8	58.9	
8.5	16.9	59.1	
9.4	19.7	23.6	
9.0	38.6	4.2	
9.5	40.0	59.8	
9.2	56.9	48.8	
10pr.	+ 28.84	+ 1.12	

4121—4180

	19ʰ	+8°	
m	′ ″	′	
9.5	24 1.5	39.4	
9.2	2.7	12.0	
8.5	4.4	5.7	K
9.5	4.4	16.1	
9.5	16.1	37.0	
9.0	25.2	59.0	
8.8	36.0	26.0	K
9.1	50.3	24.4	K
8.5	53.9	51.4	B
9.5	25 5.0	39.9	
9.3	5.4	1.6	
9.5	24.0	30.2	
9.0	33.6	43.0	
9.0	53.5	12.2	K
9.5	57.2	58.3	
9.5	26 1.0	35.9	
9.0	2.6	18.1	K
*9.5	13.0	32.7	
9.2	17.2	40.6	B
8.6	22.0	31.0	
9.5	26.3	8.9	
9.5	27.1	59.3	
9.5	35.5	15.6	
8.3	27 2.3	52.4	K
9.0	25.5	5.3	
9.2	26.4	26.4	
9.2	34.2	47.0	
9.5	53 0	39.0	
9.4	55.4	36.4	B
9.2	59.1	33.1	
9.5	28 0.0	24.8	
9.2	2.6	36.0	aB
9.3	2.6	47.1	
9.5	14.7	27.2	aB
8.6	35.5	53.7	K
9.1	29 12.2	6.4	Kb
9.3	28.0	40.5	
9.5	29.7	22.2	
9.2	40.9	27.5	
9.5	30 4.1	8.3	
9.4	5.2	42.1	aB
9.5	6.7	45.9	
8.3	6.8	0.1	K
9.2	47.4	31.8	aK
9.5	55.8	41.8	
9.4	31 0.0	58.8	
9.5	1.8	9.5	
8.6	12.6	35.7	Kb
8.0	13.5	25.7	K
8.7	19.1	14.9	L
9.5	22.3	35.3	
9.5	41.2	26.7	
9.3	48.1	7.0	
9.2	48.1	50.1	
9.5	54.0	40.1	
9.4	59.9	0.5	
9.4	32 21.0	33.3	
9.4	49.1	49.5	
9.0	52.7	7.1	
9.2	53.5	38.7	
10pr.	+ 28.87	+ 1.25	

4181—4240

	19ʰ	+8°	
m	′ ″	′	
9.3	33 4.2	23.7	
8.4	27.8	45.4	
9.2	34 12.0	54.6	
9.5	16.6	47.5	
9.5	48.3	29.7	
9.5	35 3.9	21.4	
9.5	13.1	59.3	
9.3	17.6	27.3	
8.7	40.4	53.4	
7.0	45.7	2.3	L
8.8	50.5	24.4	
9.0	36 1.1	32.1	
9.0	4.3	49.7	
9.3	14.4	40.8	
9.0	15.5	55.1	
9.4	43.6	36.8	
9.5	37 0.5	32.5	
8.2	23.6	45.6	K
9.3	33.4	46.6	
7.0	42.9	23.0	L
9.2	47.2	30.4	K
9.0	38 5.3	54.0	
9.4	8.4	14.7	
8.8	18.9	3.7	K
8.8	25.1	38.9	K
9.5	26.7	6.7	
9.5	43.1	54.7	
9.1	56.0	50.0	
9.5	39 4.2	25.3	a
9.5	18.4	56.0	
9.5	38.1	55.5	
9.1	46.9	23.8	ab
9.3	48.3	42.6	
9.1	40 18.4	56.4	a
9.2	24.1	31.8	
9.3	32.8	33.8	
9.5	33.7	1.0	
9.5	40.4	45.7	
9.5	57.8	12.0	
9.4	41 4.9	58.5	a
9.4	10.2	33.4	
9.5	12.2	11.8	
9.5	12.8	29.2	
9.1	15.6	58.7	a
9.4	33.9	7.4	
9.1	42 8.7	40.7	K
9.0	11.0	14.7	
9.2	25.0	51.1	
9.5	26.8	26.2	?
9.3	43 4.6	8.0	
9.5	30.9	57.9	
9.4	35.5	30.9	
9.2	36.6	16.9	
9.4	38.3	10.1	
9.1	40.0	7.7	
1.2	43.2	29.3	K
9.0	50.2	22.3	K
9.5	44 0.5	28.9	
9.4	3.5	33.5	
9.3	6.7	47.9	
10pr.	+ 28.91	+ 1.40	

4241—4300

	19ʰ	+8°	
m	′ ″	′	
9.5	44 21.8	13.0	
9.3	36.9	55.6	
9.3	41.4	19.9	
9.4	47.3	12.3	
9.3	45 4.8	42.5	
9.3	24.1	18.4	
8.0	30.5	45.7	B
9.4	37.0	51.8	
9.0	42.7	46.5	B
9.2	46 0.9	27.8	
9.5	6.8	51.6	
9.1	17.6	1.8	K
9.3	17.8	20.5	
9.5	34.5	9.5	B
9.5	35.2	18.4	
9.3	41.4	54.7	
9.5	45.7	8.5	a
8.5	50.5	4.0	K
8.6	51.2	40.1	
9.4	47 8.2	58.6	
5.2	13.6	5.5	K
8.3	18.5	47.8	
9.0	29.9	54.1	
9.4	29.9	59.1	
8.5	58.7	57.4	K
9.5	48 23.6	0.4	
9.5	24.0	30.2	
9.4	35.9	29.8	
9.3	39.9	34.0	
9.5	49 2.2	30.1	
9.5	7.3	5.4	
9.5	11.9	49.1	
8.8	33.5	24.6	
9.3	46.3	11.5	
8.0	53.9	4.3	L
9.2	50 4.0	43.6	K
9.5	25.8	3.6	
9.3	32 6	0.2	
9.4	35.7	1.7	
9.5	39.5	34.3	
9.5	51.2	21.6	
8.5	54.5	14.8	K
9.1	51 0.4	13.9	K
*9.5	16.6	32.1	
9.5	22.3	54.4	
8.9	28.9	11.6	K
9.5	29.2	29.0	
9.4	29.2	32.9	
9.4	38.4	16.3	
9.4	43.2	17.1	
9.5	52 0.9	8.1	
8.9	9.6	53.7	
9.5	59.0	55.6	
9.3	53 12.9	31.5	aB
9.1	30.6	20.7	a
9.3	32.7	3.5	aB
9.4	37.5	4.3	
9.4	42.1	43.6	
8.2	47.8	39.8	B
6.2	58.9	10.1	L
10pr.	+ 28.95	+ 1.53	

4051ᵉ 9.5 | 14 4.0 | 14.3

4137ᵉ 9.2 | 26 12.2 | 40.6 | B

4283ᵉ 9.5 | 31 8.5 | 31.7

	4301—4360					4361—4420					4421—4480					4481—4540					4541—4600				
	19ᵐ—20ᵐ		+8°			20ᵐ		+8°			20ᵐ		+8°			20ᵐ		+8°			20ᵐ		+8°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	54	16.0	37.6		9.1	3	13.4	33.2	*ab*	8.8	16	27.1	27.2		9.4	31	4.8	16.9	aB	9.4	41	59.5	12.0	a
9.5		19.1	38.7		9.5		17.1	43.2		9.5		43.0	59.3		9.5		13.0	27.5		9.2	42	4.7	52.0	K
9.5		29.4	3.7		8.6		18.1	50.3	K	9.5		55.7	44.6		9.5		17.0	54.3		8.3		29.1	9.3	K
9.5		55.3	55.3		9.5		34.0	27.3		9.3	17	30.1	48.8		9.2		17.9	17.1	aB	9.5		42.5	56.8	a
9.5	55	4.6	18.6		8.8		37.0	57.8	K	9.2		36.4	13.7		9.1		29.7	59.5	*a*	9.5	43	32.4	50.6	
9.3		52.4	59.6		9.4		50.6	40.8		6.9		37.1	8.8	L	9.0		32.7	11.9		9.3		34.8	7.8	aB
9.5	56	10.3	26.9		9.4		53.9	16.6	K	9.3		51.3	54.4		8.5		34.4	26.5	K	9.4		41.2	13.5	aB
9.5		10.3	15.2		9.5	4	17.5	41.7		9.3		51.8	53.4		9.5		47.8	44.6		9.5		43.5	54.5	a
9.3		16.3	3.9		7.5		20.1	18.3	K	7.2		57.8	43.7	B	9.0		48.8	40.8		9.1	44	6.2	17.8	aB
9.4		23.9	14.7		9.0		28.8	10.3	K	9.5	18	39.0	27.5	*a*	9.3		51.7	23.7		9.5		6.3	22.0	
9.5		25.5	23.7		9.4		32.4	9.1	aB	8.3		42.1	23.0		7.7		53.8	0.2	K	9.5		18.0	52.4	*a*
9.5		27.2	32.2		9.5		37.1	5.1		9.3		44.3	59.2	*a*	9.3	32	44.7	51.5		9.5		21.0	43.5	
9.4		42.5	50.0		8.8	5	23.9	13.8		9.5		48.0	43.8		9.4		58.2	29.3	aB	7.0		51.2	14.1	L
9.5		44.5	1.3		9.4		37.6	4.0		9.2		48.8	50.1	aB	9.0		58.3	14.5		9.5	45	11.2	9.5	
9.5		46.0	58.0		9.5		56.1	22.7		8.8		49.1	30.0		9.2	33	27.4	58.5	B	8.7	46	14.6	46.0	Lb
9.1		50.3	21.4	*a*	8.5	6	7.7	41.3		9.4	19	24.0	22.1	aB	9.4		33.5	56.8		9.3		20.2	5.6	aB
9.3	57	8.1	52.2		9.5		11.2	1.0		9.4		50.0	33.4	aB	9.4		51.0	38.2	aB	9.4		43.9	12.3	
9.5		26.2	22.9		9.5		28.9	56.5	aB	9.5		50.4	48.0		9.2		54.7	18.0		9.5		44.8	47.4	
8.5		32.9	39.7	L	9.5		45.6	51.2		9.3		53.0	57.2	aB	9.4	34	4.3	41.5	aB	8.8	47	2.4	57.7	
8.0		35.1	50.7	L	9.0	7	0.1	12.8	K	8.0	20	2.0	35.9	K	9.0		46.4	13.1	K	9.5		12.6	45.4	
9.5		40.8	12.6		9.2		3.9	9.4	K	9.5		27.2	9.0		9.0		48.0	41.9	Kb	8.8		16.9	30.4	K
9.2		44.4	26.8		9.5		4.5	23.9		9.0		43.1	25.1		9.4		50.9	25.1	aB	9.5		19.9	15.8	
9.2		46.6	19.7	R	8.7		14.6	34.7	K	9.2		49.1	50.2		9.5	35	2.5	26.5	*a*	9.2		25.3	19.0	
9.2		47.5	34.7		9.3		21.3	38.7		8.6		54.3	53.2	K	8.8		10.1	48.2	K	9.5		42.0	4.9	
9.5		53.3	9.5		9.3		45.7	43.6	*B*	9.0	21	33.2	6.0		9.5		16.4	25.1	B	9.5		53.3	54.0	
8.8	58	2.3	3.2	K	*9.5		56.2	8.9	*R*	8.7		36.4	43.6		9.5		42.7	10.7		9.5	48	12.2	20.3	
9.5		15.9	29.4		9.5	8	0.6	1.7		9.3		40.6	59.5	*B*	9.5		47.4	47.2		9.2		18.4	2.6	aB
9.5		18.6	58.8		9.5		5.8	33.6		9.0		51.4	35.2		9.4	36	5.9	52.0		8.8		32.9	13.7	B
9.3		28.4	6.6		9.3		9.3	54.1		9.3	22	21.3	5.1		9.3		14.1	44.1		9.5		39.0	1.8	
8.9		45.1	56.6	Kb	9.4		45.1	34.3	aB	9.1		44.1	11.2	*a*	9.0		31.1	20.4	K	9.5		45.2	1.8	
7.8	59	3.1	41.0	K	9.3	9	9.2	31.2	aB	9.5		52.2	55.3		8.0		37.1	35.0	K	7.0	49	3.9	42.9	*B*
9.5		13.3	7.8		9.5		56.3	43 6		8.0	23	20.3	53.7	L	9.0		39.1	49.2		8.8		24.2	26.9	
9.3		40.4	31.4		6.7		59.8	30.4	K	8.1		33.3	11.3	B	9.0		50.7	6.2		9.4		26.5	7.8	
9.2		47.7	58.7		9.5	10	0.5	26.8	Kb	9.0	24	12.1	17.9		9.2	37	5.2	5.0	aB	9.0		28.2	17.2	K
9.5		57.1	39.8		9.5		5.3	30.4	K	9.3		13.1	32.0		9.3		7.1	32.9		9.2	50	3.5	6.6	
9.5	0	10.4	24.6		9.2		20.7	55.6		7.8		26.8	25.5	Lb	9.5		7.9	15.2	B	9.3		18.0	44.4	aB
9.1		14.1	16.9	aB	9.5		22.1	21.0		9.0		32.5	50.0		9.4		14.9	17 6	aB	9.5		21.6	58.4	
9.4		15.1	0.7	aB	9.5		50.4	32.8		9.5		59.1	14.4		9.2		32.4	40.6		9.4		29 6	42.9	*a*
8.6		16.3	13.1		9.1	11	28.4	48.4	*ab*	9.0	25	4.1	22.0		9.5		43.6	0.5		9.5		30.8	30.1	
8.7		21.8	31.3	K	9.5	12	9.7	55.8		9.0		48.1	46.7	K	9.5		54.1	37.1		9.5		48.4	55.5	
9.2		25.7	29.7	aB	9.2		40.8	52.3		9.4	26	4.3	25.9		8.8	38	17.1	11.4	K	9.4	51	4.9	1.6	
9.3		29.8	15.6		9.4		54.2	6.4	aB	9.3		17.4	48.8	K	9.2		23.8	21.5	K	8.3		25.3	14.1	K
9.4		32.4	2.3		9.5	13	28.3	52.9		9.0		31.2	47.9	K	9.5		24.6	54.2		9.5		42.2	21.0	
6.5		51.8	58.4	K	9.5		29.3	13.0		8.9		48.1	47.4	K	9.0		39.1	6.5	K	9.5		50.5	37.3	
9.0	1	2.3	30.7		9.3		38.3	48.8		9.5	27	4.1	46.0		9.5	39	4.0	51.5	aB	8.5	52	12.1	5.2	L
9.0		2.8	23.3	K	9.3		45.8	27.2	*a*	9.5		5.8	57.8		8.8		5.0	40.7		9.5		30.5	9.0	
9.5		17.8	6.1		9.3	14	2.0	13.3	B	9.4		38.1	50.9	aB	9.5		33.1	13.1		9.0		36.9	19.9	K
9.5		26.3	22.8		9.0		5.0	9.0	K	9.5	28	8.6	30.3	aB	9.5		41.0	16.7		9.5	53	15.0	45.9	
8.9		56.7	28.1	K	9.5		8.8	18.8	aB	9.5		31.0	36.5		9.0		45.5	3.3	Kb	9.0		26.9	18.5	K
9.0		58.8	26.6	K	9.4		29.5	58.8	B	8.8		31.8	5.0		9.4		58.1	16.7	aB	9.4		57.9	35.5	
9.3		59.6	50.8		8.9		31.4	0.1	K	9.2	29	35.4	29.6	*a*	9.5	40	1.7	30.8		9.5		59.2	46.0	
9.5	2	16.6	12.1		9.0		42.4	27.9		7.5		39.0	5.4	K	8.8		39.5	53.8	K	9.2	54	9.0	0.2	*B*
9.3		25.5	36.2		8.5		46.0	24.7		9.5		56.1	20.8		9.4		47.1	38.6	B	9.5		9.7	32.5	
9.3		41.0	57.6		7.8		46.1	3.6	K	8.0	30	1.4	28.6	K	9.5		51.3	59.2		9.4		22.7	28.5	aB
9.3		42.7	2.3	aB	8.5		54.1	20.3	L	9.3		3.1	23.6	B	9.4		53 7	40.7	aB	9.5	55	20.9	37.6	
9.5		44.9	46.4		8.7	15	21.7	57.6		9.5		8.3	36.0		9.5		59.2	10.6		9.5		23.2	28.3	
9.4	3	2.4	46.3		9.3		39.4	45.3		9.2		14.3	26.5	*a*	9.3	41	17.1	10.6	aB	9.0		29.0	2.3	
6.5		7.3	1.7	K	9.2		49.2	3.1		9.5		27.4	8.0		7.7		34.1	55.9	K	9.5		44.3	50.8	*B*
9.4		9.6	15.8		9.0		58.0	28.6		8.7		36.4	47.7	K	8.5		47.5	56.6	K	9.1	56	5.2	26.4	Kb
9.2		10.3	52.5	*a*	8.6	16	4.8	0.2	K	9.5		38.3	52.6		9.3		48.0	8.6	aB	9.5		5.7	5.5	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*28.99*	*1.65*		*10 pr.*		*29.03*	*1.78*		*10 pr.*		*29.10*	*1.95*		*10 pr.*		*29.17*	*2.11*		*10 pr.*		*29.24*	*2.24*	

4385ᵐ					
var	*7*	*55.0*	*39.1*	*B*	

4601—4660					4661—4720					4721—4780					4781—4840					4841—4900				
	20ʰ—21ʰ		+8°			21ʰ		+8°			21ʰ		+8°			21ʰ—22ʰ		+8°			22ʰ		+8°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	56	22.3	3.0		7.8	16	14.6	51.1	K	9.0	35	46.5	39.0		9.4	55	38.1	56.9		9.5	10	53.6	47.1	
9.5		27.2	43.9		8.8		19.9	46.4	*B*	9.0	36	10.5	41.2		8.3	56	22.5	22.6	K	9.0	11	3.0	17.0	
8.9	57	14.4	56.8	K	9.5		22.9	1.5		9.1		18.4	47.4	*aB*	8.0	57	24.9	12.6	K	8.7	12	0.7	1.2	K
9.0		24.0	4.6		8.3		26.5	34.5	K	8.5		25.2	30.4	K	9.4		40.3	34.7	*aB*	9.5		10.5	18.5	
9.5		29.0	9.8		8.7		33.2	12.9	K	9.4		50.5	8.3		9.5		45.7	37.9	*aB*	9.5		15.6	50.9	
8.2		44.5	16.4	L	9.5	17	5.5	1.6		9.1		53.5	7.1	K	9.3		59.0	4.8		9.2	13	13.7	4.0	
9.5		49.0	30.6		9.5		12.8	13.4		9.3	37	3.4	57.5		8.8		59.6	48.3	K	9.2	14	23.5	17.9	
9.3		53.0	32.0		8.8		33.2	5.1		9.0		18.7	8.6	K	8.5	58	2.0	29.1	K	9.5		27.3	43.7	
9.3	58	13.2	56.9	*B*	9.3		34.5	34.9		9.5		50.3	3.9		9.0		11.3	5.4		9.3		33.6	39.8	
8.5		14.9	35.8	K	9.3		57.0	43.1	K	9.5	38	26.0	43.9		9.5	59	12.0	58.3		8.3		45.6	58.4	K
9.5		27.9	32 8		7.8	18	0.9	46.6	K	9.5		31.1	6.7		9.1		51.0	26.3	*ab*	9.5		56.3	33.6	
9.2		56.9	46.7		9.5		13.5	54.2		9.2		53.2	49.5	K	7.1	0	20.8	57.9	K	9.5	15	0.0	26.6	*B*
8.8	59	0.5	4.4	K	9.3	19	0.7	30.0		9.5		55.5	7.6		9.5		29.8	31.9		8.9		13.3	14.5	
9.5		55.9	38.0		9.1		13.9	17.8	*ab*	8.1	39	12.0	41.5	K	9.5		39.0	50.3		9.3		26.9	29.0	
9.0	0	3.2	40.8		9.2		12.2	39.4		9.0		25.1	39.4	K	9.3		42.8	3.3		9.3		36.5	38.2	
7.7		23.5	43.2	K*b*	9.2		15.1	21.5		9.0		47.0	42.8	K	9.1	1	13.6	14.8	K	7.8		54.0	44.2	L
9.5		30.0	16.7		9.5	20	5.2	0.6		9.1		51.0	49.1	*a*	9.0		24.5	45.8		8.8	16	4.7	36.8	R
7.7		57.9	46.7	K	9.5		32.4	8.5		9.5	40	5.2	32.0		9.5		26.7	0.1		9.2		13.5	22.7	K
9.5	1	22.7	7.6		9.0		57.7	35.6		9.5		46.6	22.3		8.8		33.5	44.9	K	9.2		14.6	25.1	K
9.2		36.9	45.0		9.0	22	0.9	11.5		9.3	41	19.3	20.3		8.8		33.8	11.3	K	8.7		18.5	33.8	K
9.5		40.0	15.3		9.3		40.4	0.6		9.3		26.0	18.6		9.5		42.8	22.8		8.8		21.8	44.0	
9.3	3	0.5	50.6		9.3		51.9	3.6		9.5		31.3	6.7		7.8		53.5	44.8	K	9.2	17	2.2	49.7	
9.5		6.1	2.8		9.0		58.8	10.9	K	8.8		51.6	35.5		9.3		59.4	4.6		7.9		37.8	0.6	L
9.5		7.6	9.0		9.4		58.9	38.0		9.5	42	27.5	39.7		9.5	2	1.7	8.0		9.5		38.0	9.7	
7.4		55.1	57.4	K	9.3	23	0.8	41.2	*aB*	9.3	43	1.6	30.3		9.3		29.7	39.4	*aB*	8.9		58.5	4.5	L
9.5	4	5.9	56.7		9.5		12.0	53.7		9.5		21.6	31.8		8.9		36.4	49.5	K	9.5	18	11.6	38.9	
8.5		55.7	11.3	K*b*	9.5		35.9	25.1		9.5		57.0	0.5		~~9.4~~		~~59.8~~	~~38.7~~		9.2		11.6	20.7	K*b*
9.3		57.5	40.3	*aB*	9.3		40.3	56.0	*aB*	9.5	44	2.4	6.3	*aB*	9.0	3	10.3	17.3		9.5	19	22.1	13.0	
9.5	5	2.0	38.9		9.5		41.5	10.5		8.5		21.5	22.0	K	9.5		31.3	26.6		9.5		30.3	21.5	*B*
9.3		30.4	59.7		9.4	25	55.5	20.7	*aB*	9.3		23.6	33.8		9.5		46.9	40.7		7.8		57.2	11.4	K
9.2		54.9	49.6	*b*	9.5	26	9.2	6.2		8.2		33.3	22.3	K*b*	9.3		48.3	47.1		9.4	20	20.7	6.3	*aB*
8.0	7	13.2	3.9	*B*	9.3		9.9	41.1		9.0		41.6	12.0		8.2	4	19.1	59.4	L	9.3		21.9	13.1	*K*
9.5		15.7	5.1		9.5		29.9	11.2		8.0		48.3	24.4	K	9.5		48.6	4.7		9.1		57.1	25.8	*a*
9.5		35.5	0.2		9.4		48.2	49.1		9.5		50.9	53.2		8.3		53.5	17.3	K	5.8	21	53.0	23.2	K
9.0		45.9	24.8		7.8	27	23.9	51.9	K	9.5		52.6	5.1		9.5	5	17.2	48.1	*B*	9.0		56.3	55.3	
8.0	8	39.7	10.6	K	9.4		40.5	41.5	*aB*	9.5		53.9	59.1		9.5		50.9	57.0		9.5	22	27.9	41.0	
9.5		41.5	40.4		9.2	28	4.0	54.2		9.0	46	39.6	44.2		9.2	6	11.4	2.9		9.3		45.7	19.5	
8.2	9	26.5	48.0	K	9.5		15.7	8.5		8.6		47.3	1.2	K*b*	9.3		20.4	8.6	R*b*	9.4	23	44.9	52.8	
8.4		37.9	43.2	K	9.2		17.1	50.7	B	9.5		47.3	11.7		9.5		23.1	59.8		9.5		55.3	44.8	
9.5	10	11.5	35.2		9.5		36.9	26.5		8.5	47	25.7	6.4	K	9.0		25.2	39.8		7.7		55.7	34.5	K
8.3		14.2	25.9	K	9.5	29	1.2	28.3		9.3		26.3	42.2		8.0		47.5	45.1	P	9.3	24	2.2	58.9	
9.5		16.9	10.0		9.4		35.1	14.6	*aB*	9.0		58.3	46.3	K*b*	9.1		49.3	50.4	*a*	9.2		4.3	22.2	K
9.5		29.5	2.0		9.2		37.9	18.9	*aB*	9.5	48	10.6	39.0		8.2		56.4	30.9	*B*	8.5		7.4	13.5	K
8.5		41.9	18.5	K	8.8		50.2	32.8		9.5		17.5	4.7		8.7		57.3	34.6		9.3		17.6	48.4	
9.5		55.1	57.8		9.5		56.0	56.4		9.3		25.0	17.7	*a*	9.2	7	6.6	12.9		8.7		18.2	27.9	K
9.3	11	18.9	24.8		8.5	30	5.2	1.6	K	8.9		41.3	11.4	K	9.3		8.9	27.8		9.1		39.5	0.0	*a*
8.8		22.9	18.2	K	8.8	31	18.6	23.0		9.0	49	3.1	54.3		9.5		25.3	21.8		9.3	25	41.9	37.0	
8.0		30.9	20.6	K*b*	9.5		18.8	1.0		9.0		6.6	16.0	K	8.2		27.0	6.6	*B*	9.2	26	1.7	13.8	K
9.5		53.6	55.5		9.5		20.8	39.0	*aB*	8.8		44.3	36.2		9.3	8	5.9	32.4		9.0		37.6	30.5	K
9.5	12	29.8	59.0		9.5		22.8	39.4	*aB*	9.5		46.5	51.5		9.5		12.6	33.8		8.0		42.7	27.4	K
7.0		34.6	55.3	K	8.3		55.9	25.6	K	9.3		49.5	18.9		9.4		21.9	14.3		9.5		48.6	57.1	
9.3		45.0	10.9		9.5		58.0	5.5		9.5	52	44.9	24.9	*a*	9.3		41.1	20.2		8.0		52.5	40.9	K*b*
9.3	13	23.5	42.5		9.0	32	19.0	36.6	K	9.5	53	2.0	44.6		9.0		42.8	45.6	K	9.5	27	19.3	59.6	
9.5		55.2	14.4		7.2		53.6	31.9	B	9.3		9.6	11.3		9.5		47.1	18.2		9.5		44.7	43.2	
8.7	14	3.2	41.8	K	9.0	33	7.5	22.0		8.9		17.9	35.8	K	9.3		53.3	28.5		9.5	28	12.3	48.8	
9.4		35.4	53.2		9.5		18.5	48.7		9.0		19.4	5.8	K	8.9	9	10.4	56.0	K	9.5		13.3	9.1	
9.3		40.0	51.5		9.3		45.9	48.7		9.3		25.1	44.8		9.5		29.3	46.7		9.5		27.6	34.8	
9.0	15	1.0	10.5		9.3		54.6	56.2		9.5	54	18.0	17.5		9.5		50.3	36.4		9.3		38.7	44.5	
9.3		3.0	9.5		9.1	34	48.3	9.2	*ab*	8.9		42.0	16.6	K*b*	9.4	10	32.5	5.3		9.5		48.3	14.0	
9.1		31.9	18.2	*aB*	8.5	35	19.2	16.8		9.4	55	25.8	45.9		9.3		50.3	35.5		9.5	29	17.6	5.6	
10pr.		+ 29.35	+ 2.42		10pr.		+ 29.48	+ 2.61		10pr.		+ 29.60	+ 2.77		10pr.		+ 29.75	+ 2.91		10pr.		+ 29.87	+ 3.03	

4601*a*

9.5	56	25.2	39.3	B

4621*a*

9.5	2	17.0	23.7	

4901—4955

m	22ʰ		+8°		
	′	″	′		
9.5	29	19.6	56.7		
9.1	30	7.1	3.3		Kb
9.1		27.3	26.4		K
9.4		27.5	24.7		aB
9.0		43.7	36.5		K
7.3	31	12.1	30.3		K
9.5		35.3	35.3		a
9.4		37.6	57.3		
9.5	32	14.9	4.2		
9.4		32.8	21.8		
9.3		44.6	53.3		a
8.3		49.9	49.9		K
8.9	33	12.0	28.9		
9.5		25.7	3.8		
9.1	34	2.5	34.9		aB
8.6		34.3	22.4		
9.2		38.6	3.7		
9.3	35	8.4	47.5		
9.3	36	11.8	25.5		
9.0		49.7	52.8		
9.2	37	12.7	18.5		b
9.3		18.4	35.2		
9.5		35.2	45.5		
9.5	38	8.1	50.2		
9.5		30.5	15.4		
9.1	39	0.0	42.6		a
9.5		12.1	52.9		
8.8		12.8	42.3		
8.9		37.9	11.4		K
9.5		50.2	42.6		
9.4	40	1.2	25.5		
9.5		5.2	53.9		
9.5		12.6	22.7		
9.5		24.8	49.3		
9.0		31.5	19.2		
9.5		38.0	1.0		
8.9	41	12.7	4.2		K
9.5		38.0	33.7		
8.8		43.6	1.0		K
9.3		51.6	17.2		
9.5	42	13.8	46.5		
9.3		24.6	37.1		
9.5		25.0	51.8		
9.3		50.8	36.7		
9.4	43	27.2	48.7		
9.3	44	11.0	17.7		
9.5		22.6	16.5		
9.4		31.1	13.4		
9.0		36.8	54.0		K
9.5		56.0	5.7		B
9.1		57.3	53.5		K
9.3	45	10.9	42.3		
8.9		16.0	12.8		K
9.3		35.5	9.7		
9.5	46	15.2	39.0		
		+	+		
10pr.		30.03	3.13		

4956—5010

m	22ʰ—23ʰ		+8°		
	′	″	′		
9.3	46	35.5	48.2		
9.3		42.9	19.7		
8.8	47	27.3	48.0		
9.0		32.3	50.7		
8.0		51.2	41.8	K	
4.7		57.0	2.8	K	
9.5	48	22.9	51.1		
9.5		42.6	48.8		
9.5		50.0	59.6		
9.1	49	10.0	9.9		
8.7		47.0	28.7		
9.3	50	3.1	14.9	B	
9.5		19.0	52.7	B	
9.5		26.8	40.4		
9.5		26.8	30.4		
9.3		30.5	17.8		
9.4		55.3	20.5		
6.8	51	14.0	35.2	K	
8.4		18.4	1.3	K	
9.5		45.4	29.3		
9.4	53	17.2	51.3		
9.5		59.1	44.4		
9.3	54	19.3	35.6		
8.5		28.8	22.4		
8.6	55	12.5	47.7		
9.5		35.2	56.2		
9.5		52.8	8.3		
9.4		57.4	22.3		
8.2	56	11.5	10.7	K	
8.6		12.4	1.9	K	
8.9		50.2	29.3		
9.3	57	13.4	8.6	K	
8.1		23.3	4.7	K	
9.2		27.9	33.8	B	
8.4		29.2	18.0	K	
9.1		44.2	48.8	ab	
9.2	58	32.1	27.3	K	
8.2		35.9	7.0	L	
9.4		41.6	22.5	B	
9.2	59	1.2	15.2	K	
9.2		26.6	5.6		
5.2		42.5	37.2	K	
9.4	0	19.0	22.6		
9.0		30.5	45.1		
9.5		33.2	36.7		
9.5	1	7.3	52.2	?	
9.4		14.0	43.2		
8.8		14.5	19.7		
9.4		39.2	58.5		
9.5		39.3	33.7		
9.5		51.8	18.0		
9.5	2	23.0	14.3		
9.3		27.5	48.5		
9.3		48.2	21.2	B	
9.5		56.3	13.7		
		+	+		
10pr.		30.17	3.21		

5011—5064

m	23ʰ		+8°		
	′	″	′		
8.5	3	21.5	59.7	Kb	
9.0		25.6	9.0	K	
9.4		32.9	46.3	B	
9.2	4	30.6	1.1	K	
9.2		44.0	5.4	K	
9.0		56.8	20.3		
9.5		59.0	58.8		
8.5	5	3.7	14.7	K	
9.5		39.3	46.3		
7.7		46.5	10.4	K	
9.4	6	41.0	21.6		
9.5		47.6	56.1		
9.3		51.5	3.7		
9.5	7	11.0	32.2		
9.5		11.6	23.6		
9.5		14.3	51.2		
9.5		35.7	22.5		
9.5		39.1	41.7	aB	
8.7		45.3	0.1	K	
9.4	8	16.6	57.0		
9.3		31.0	51.8	b	
9.3		45.0	50.3		
9.0	9	45.0	20.8		
9.5		54.7	28.2		
9.0	10	8.6	10.9		
9.3		10.6	53.8		
8.9		36.0	18.5	K	
9.3		36.2	34.9		
8.2		40.3	42.7	L	
9.0	11	9.5	12.0	K	
8.6		36.6	38.3	K	
8.9	12	19.0	16.4		
9.4		20.3	27.0		
9.5		21.3	45.7		
9.3		39.3	1.7		
9.4	13	5.2	18.9		
9.5		10.6	32.5		
8.6		39.6	50.9	K	
8.7		53.2	37.7	L	
9.5	14	27.4	18.9		
9.5		45.8	57.1		
9.5	15	43.8	58.5	B	
9.5	16	19.7	6.4		
9.4		49.1	7.7		
9.5	17	24.0	19.3		
9.5		42.9	30.9		
8.4	18	32.0	7.2	L	
7.3		47.7	7.6	L	
9.5	19	12.0	56.5	?	
9.5		12.3	41.0		
8.4		19.2	56.9	K	
9.0		55.4	56.4		
9.2		58.2	38.0		
9.5	20	3.9	11.8		
		+	+		
10pr.		30.29	3.26		

5065—5118

m	23ʰ		+8°		
	′	″	′		
9.3	21	1.4	57.4		
7.8		10.5	37.6	K	
9.3		20.0	27.6		
9.5		42.4	11.9		
9.3	22	25.5	5.5		
8.8	23	22.5	20.6	R	
8.2		34.2	41.1	L	
7.9		59.4	57.2	K	
9.5	24	15.0	49.7		
8.5		19.8	30.7	K	
9.4	25	13.7	26.1		
9.5		26.0	22.8	?	
9.3		28.1	9.6		
9.2	26	12.5	21.8	b	
9.0	27	7.5	32.2		
9.3		37.7	32.2		
9.4	28	3.0	41.9		
9.3		3.9	2.9		
9.5		33.0	1.5	B	
8.8		56.7	53.2	K	
8.7		58.0	36.3	K	
9.5		59.8	15.7		
9.3	29	23.8	22.6		
9.5		25.5	51.3		
9.4		28.0	44.5	K	
8.9		47.5	41.6	K	
9.5		49.8	2.7		
9.2	30	8.3	28.4		
9.2		16.2	38.4	K	
9.3		18.5	41.6		
6.0	32	31.4	52.3	K	
9.3		38.2	17.0		
9.4	33	46.7	39.0		
9.3		56.4	28.6		
9.5		59.1	10.1	B	
9.3	34	28.0	57.5		
8.9		52.2	10.0	R	
9.4	35	16.8	35.3		
9.5	36	18.4	31.5		
9.0		43.0	7.8	K	
9.4		49.1	4.2		
9.3		50.0	32.5		
9.2	38	11.6	9.3	R	
9.3		17.2	5.2		
9.3		28.8	28.7		
9.3		29.5	23.2		
9.3		33.8	41.6		
7.9		56.2	59.5	K	
9.3	39	40.0	13.4		
8.5		40.3	44.5	Kb	
9.1		56.6	40.6	K	
9.5	40	8.3	31.4		
9.4		19.0	41.9		
9.3	41	49.0	57.5		
		+	+		
10pr.		30.46	3.31		

5119—5172

m	23ʰ		+8°		
	′	″	′		
9.0	42	11.5	42.4		
9.4		47.3	50.8		
9.4		53.6	44.7		
8.3	43	7.3	42.2		Kb
9.5		10.0	16.8		
9.3		15.6	31.1		
9.0		47.6	53.2		Kb
9.1		56.3	57.7		K
6.5		57.7	30.3		L
9.3	44	22.4	15.0		
9.4	45	14.0	23.6		
9.5		25.4	33.9		
9.4		27.3	42.8		
9.3		38.7	18.8		
8.3		43.5	53.6		L
9.3	46	1.3	36.5		
9.5		1.3	37.8		
9.3		2.2	50.7		
8.8		3.7	18.3		Kb
8.5		40.0	25.5		K
8.7		58.2	20.7		K
9.2	47	39.7	47.3		
9.3		43.0	37.0		B
9.4		51.3	56.2		
9.3		59.3	35.3		
9.1	48	5.8	5.6		a
9.3		57.5	18.7		
8.7	49	38.5	58.4		K
9.4		46.0	33.3		
9.4	50	8.7	46.5		
9.4		28.9	55.3		
9.3		48.6	56.9		a
9.3		50.0	8.3		
9.0	51	18.0	25.7		K
8.7		23.5	44.5		L
~~9.6~~		~~44.5~~	~~39.1~~		
8.5		48.7	33.9		K
9.5	52	53.3	31.8		
9.5	53	18.7	21.5		
9.3		44.3	16.5		
9.3		52.3	34.2		
~~9.6~~	54	~~13.1~~	~~0.1~~		
9.3		19.3	49.2		Kb
9.4		23.3	49.5		
9.0		48.2	10.0		K
6.7		59.6	8.5		K
9.5	55	32.9	59.3		
8.7		33.5	19.9		Kb
9.3	56	21.8	21.7		
8.3	57	36.2	28.5		Kb
9.2		42.0	56.8		
9.5		52.8	22.8		
9.5	58	26.2	1.8		
7.5		43.7	54.7		K
		+	+		
10pr.		30.62	3.33		

5047 a
var | 13 13 | 7.6 |

Zone + 9°

1—40					41—80					81—120					121—160					161—200				
	0ᵐ		+9°			0ᵐ		+9°			0ᵐ		+9°			0ᵐ—1ᵐ		+9°			1ᵐ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	0	1.3	49.2		9.0	18	18.7	35.9	K	8.9	36	6.0	16.0	K	9.2	55	29.2	20.4	K	8.6	15	44.5	3.9	
9.5		31.9	16.3	αB	9.5		20.6	57.1		9.5		48.1	3.1		9.0		34.0	33.3		8.4		45.2	53.5	R
9.5	1	5.8	29.4		9.5	19	15.7	28.4		9.0		53.8	9.3	K	9.0		59.0	19.3	K	9.5		53.0	28.1	
9.5		24.7	4.6	αB	8.6		25.6	20.9	K*b*	9.0	37	49.3	30.8	K	9.4	57	35.5	30.0		9.3		54.1	43.3	αB
8.7		34.3	2.3		9.5		41.9	11.6		9.3		50.0	29.9		9.3		59.7	45.6	*b*	9.5	16	9.9	26.6	αB
9.1		37.3	49.3	K	9.5	20	30.5	47.6		9.4	38	9.6	27.2		9.5	58	34.6	50.8		9.5	17	14.8	31.8	
9.5	2	7.3	0.5		6.5		50.1	23.7	K	9.3		31.4	40.9		9.3		51.0	8.2	K	6.8	18	20.7	39.3	K
9.5		14.8	42.3	K	9.5	21	29.1	2.7		9.0	39	15.3	46.8		9.5	59	23.4	40.7		9.4		41.6	47.8	αK
9.5		28.3	47.2		9.4		50.1	3.8		9.0	40	35.7	26.0	K	9.5		27.0	49.0		9.3		56.0	30.5	
9.2	3	10.8	15.5	K	8.0	22	3.2	35.5	K	9.0		45.0	29.1	K	9.4		30.0	25.8		9.5	19	15.6	5.5	
9.5		33.8	35.0		8.9		10.0	5.7		9.1	41	15.9	2.8	K	9.5	0	35.9	50.1		9.5	21	5.5	41.4	
8.4		48.1	49.8	K*b*	9.5		37.8	44.1		9.5		16.0	57.5		6.5		46.7	8.2	K	8.2		27.9	40.9	K*b*
8.5	4	11.8	30.8	K	9.5	23	0.3	26.5		9.3		55.3	2.8	K	9.3	1	1.0	15.8		9.5		29.0	55.1	
9.1	6	1.9	27.0	*ab*	9.5		39.9	14.4		8.8	42	21.0	56.6	R	9.0		20.7	46.7		9.5		46.7	8.2	
9.5		16.0	38.6		9.5		51.0	20.9		9.5		32.0	22.9		9.3	2	3.7	58.5		8.5	22	13.3	29.1	L
9.4		31.2	36.4		9.5		53.8	29.0	αB	9.1		48.3	4.2	K	9.5		41.6	33.3		9.5		23.5	34.3	
9.5	7	14.6	36.3		9.5	24	35.9	55.6		8.5	43	1.7	36.4	K	9.5	3	23.8	10.2		9.2		30.0	7.7	K
9.5		54.5	4.0		9.5		50.4	18.7		9.5	44	8.0	22.1		7.0		53.6	32.1	K	9.3		55.8	22.5	
8.8	8	25.4	59.0		8.2	25	2.2	41.5	K	8.3		34.2	49.4	L	9.3	6	31.4	58.7	K	9.5	23	15.4	47.0	
9.1	9	14.1	17.3	*a*	9.5	26	2.0	12.8		9.3	45	1.0	54.3		9.5	7	1.8	14.6		9.5		27.4	1.4	
6.8		21.3	26.6	K	9.4		15.7	8.6		8.3		14.3	1.7	K	9.5		35.1	22.4		9.3		30.8	37.0	R
7.5		34.8	34.3	K	6.8		41.7	30.2	K	8.7		42.0	7.3	K	7.0	8	12.4	0.9	K	8.3	24	16.0	14.4	K
8.3		37.3	41.9	K	9.3	27	10.4	50.5		9.4	46	9.3	29.8	R	~~9.6~~		~~33.3~~	~~12.0~~		9.1	25	18.3	4.4	*ab*
8.6		58.0	13.0		9.5		23.7	29.1		9.4		37.7	49.1		8.6		40.3	28.4	R	9.5		21.1	28.9	
9.3	10	21.7	58.3		9.5		36.4	18.7		9.5	48	9.7	45.0		9.2	9	22.4	7.2	K	9.4	26	24.8	55.2	αB
9.0	11	20.8	24.9	K	9.4		56.6	41.3		9.3		40.0	6.2	K	7.8		37.5	50.8	K	9.5	27	1.1	28.5	
9.5		49.7	25.7		9.4	28	1.0	20.8	αB	9.5		59.0	57.9		9.5	10	4.9	40.1		9.0		37.7	10.7	K
9.5	12	8.8	49.3		9.0	29	41.3	49.5	K*b*	9.0	49	1.4	52.3	K	8.5		11.1	32.1	K	9.5		49.0	24.5	
9.5		20.3	45.5		9.5	30	15.5	34.6		8.8		10.0	23.5	K	9.5	11	4.1	12.3		8.3		54.4	49.1	K
8.8		59.8	7.5	K	8.2		36.9	2.0	K	8.7		12.1	12.8	K	8.9		49.4	16.5	K*b*	9.5	28	56.1	57.2	
9.4	13	10.5	30.1	αB	9.5	31	6.3	43.0		9.3		35.4	39.1		9.4	12	45.4	57.0		9.5	29	39.0	21.5	
9.5	14	5.3	25.5		9.5		20.7	17.4		9.5	52	3.3	40.5		9.5	13	10.9	48.9	*a*	8.5		39.6	41.6	R
9.5		7.6	57.7		9.5	32	5.4	50.6		9.4	53	5.9	9.0		9.5		13.1	48.7	*a*	9.3	30	8.3	20.9	
9.5		46.6	52.5		8.5		32.1	28.4		9.0		5.0	44.4		9.5		54.4	56.8		8.1		19.0	0.9	K
9.3		48.7	58.6		9.5		34.0	35.7		9.1	54	4.5	13.4	*a*	9.3	14	18.0	45.3		9.3		25.1	54.3	K
9.5	15	11.5	13.0		9.3	33	4.0	19.1		8.5		22.0	18.1	K	9.5		32.6	45.7		9.2		28.5	59.4	K
9.2		30.3	25.4	α*Bb*	9.5		31.1	32.0		9.5		30.3	57.2		9.1		56.4	49.1	R	9.3		35.0	46.5	K
9.2		57.9	46.5		9.5	35	2.0	20.3		9.5		37.9	24.4		7.0	15	7.7	36.5	*B*	9.2		41.5	3.3	K
9.1	16	29.9	7.7	K	9.5		2.7	37.9		9.5		44.0	29.0		9.5		41.6	40.8	αB	8.8		54.0	9.1	K
9.5	18	6.5	42.1		9.5	36	0.7	46.4		9.5	55	21.7	32.6	αB	9.5		41.6	41.5		9.4	31	28.0	13.5	αB
10pr.		+	*30.81*	*3.34*	*10pr.*		+	*30.97*	*3.32*	*10pr.*		+	*31.15*	*3.27*	*10pr.*		+	*31.37*	*3.20*	*10pr.*		+	*31.52*	*3.12*

201—260

	1ᵐ	+9°	
m	′ ″	′	
8.8	31 46.6	55.9	K
9.5	33 36.0	48.1	
9.0	36.0	23.0	K
8.9	37.5	22.7	K
9.5	34 38.6	26.3	
8.2	56.5	31.1	K
9.5	35 6.9	5.6	
9.3	32.2	53.1	
9.2	49.5	44.3	
9.5	53.7	22.8	
9.5	56.9	45.8	
9.1	36 8.5	26.6	*ab*
9.5	47.1	40.9	
9.5	37 47.9	21.3	
9.1	58.8	49.4	*aB*
9.5	38 19.5	36.4	
9.5	29.3	44.8	
9.4	39.7	38.8	
9.5	39 18.1	24.6	
9.5	58.6	41.5	
9.5	40 25.3	14.6	
9.1	52.8	21.7	*a*
8.7	56.5	29.4	K
9.5	41 15.0	57.7	
9.4	57.4	3.6	*aB*
9.5	42 32.0	48.2	
9.4	36.5	27.6	
9.1	38.3	5.5	K
9.2	43 44.4	24.9	*b*
9.5	44 1.2	24.2	
9.5	36.1	49.6	
9.5	45 0.8	30.4	
9.5	15.9	8.0	
9.0	19.5	43.3	K
7.1	46 17.7	54.8	K
8.0	29.6	13.3	L
8.2	39.5	38.4	K
9.5	50.8	29.0	
9.5	47 9.7	6.8	
9.2	21.5	28.4	R
9.4	48 8.4	20.3	*aB*
9.5	56.7	16.5	
9.5	49 21.7	31.8	
9.0	27.2	41.8	
9.2	45.1	10.6	K
8.8	50 7.2	35.7	R
9.1	51 0.9	56.1	*a*
9.4	15.2	2.4	*aB*
9.4	29.0	6.9	
9.5	29.5	0.3	*aB*
9.5	52 6.0	54.8	*a*
9.4	19.7	19.9	*aB*
7.7	40.3	54.4	*Kb*
9.5	53 4.2	4.5	
9.5	28.2	42.3	*a*
9.3	54 12.7	51.1	
9.5	53.0	7.7	
9.3	59.2	16.1	
9.5	55 25.2	33.3	
9.5	53.1	13.6	
	+	+	
10pr.	*31.71*	*3.00*	

261—320

	1ᵐ—2ᵐ	+9°	
m	′ ″	′	
9.5	56 10.2	0.2	
9.0	16 5	24.5	*Kb*
9.5	57 11.5	40.9	
7.3	18.5	25.2	K
9.4	28.8	49.9	
7.5	42.0	22.1	K
9.5	46.8	45.7	
9.4	58 27.5	56.2	
9.5	50.2	38.1	
9.5	51.8	38.0	
7.7	56.4	47.8	K
9.0	0 39.1	54.6	K
9.4	1 34.5	22.0	
9.5	55.6	18.5	*B*
9.5	2 12.2	0.6	
9.5	47.5	53.0	
9.5	54.2	30.4	
9.5	3 53.0	31.5	
9.4	4 3.8	5.8	
8.4	45.5	37.7	K
9.5	59.5	42.9	
9.5	5 15.0	44.2	
9.5	6 9.0	47.6	
9.5	9.8	19.6	
9.3	16.5	26.2	*b*
9.5	19.5	55.3	
9.5	24.7	47.5	
9.5	7 20.0	58.3	
9.5	26.5	35.3	
9.5	31.0	9.8	
9.5	41.5	30.8	
9.5	47.5	46.5	
9.5	8 22.0	17.7	
8.7	54.3	5.4	K
9.3	9 0.5	49.2	
8.6	8.1	6.6	K
9.5	51.2	31.1	
9.2	53.0	25.8	*Rb*
8.8	10 2.5	45.7	K
9.5	45.8	37.5	
8.5	46.9	10.1	K
9.4	11 5.3	27.5	
9.5	12 2.8	56.2	
9.0	43.2	58.4	
8.4	13 8.0	57.5	K
8.3	8.5	20.4	B
8.6	35.6	4.5	
9.5	14 21.2	59.3	
9.5	37.0	50.6	
9.5	44.8	8.2	
9.2	54.5	49.4	*b*
9.5	56.0	54.7	
7.7	16 25.5	36.9	K
9.3	31.8	34.7	*aB*
7.6	46.1	3.1	*Kb*
5.7	17 3.0	57.9	K
9.5	39.8	13.5	
7.6	55.4	51.4	K
7.5	18 23.5	59.1	K
9.5	59.0	33.2	
	+	+	
10pr.	*31.90*	*2.83*	

321—380

	2ᵐ	+9°	
m	′ ″	′	
7.0	18 59.1	55.2	K
8.8	19 2.4	56.4	K
7.3	42.0	33.5	K
9.3	53 5	13.6	*R*
9.5	20 9.5	26.5	
9.5	41.5	24.1	
9.0	21 38.6	43.7	
9.0	22 13.0	28.0	
9.5	19.5	46.4	
9.4	24 10.8	37.0	*aB*
9.4	29.3	30.2	*a*
9.5	35.0	25.0	
9.2	56.1	22.9	*b*
9.1	57.0	12.3	*aR*
9.5	25 8.5	35.3	
9.5	52.2	0.0	
9.3	27 9.5	12.6	
9.3	47.0	46.8	
9.0	54.0	29.4	
9.5	28 13 5	13.8	
9.5	21.0	44.7	
8.9	29 0.6	54.3	
9.5	18.0	15.4	*B*
9.3	30 15.5	24.8	*b*
9.5	31 2.5	54.5	
9.2	32 17.8	30.4	
9.3	38.5	29.0	
9.5	45.0	4.3	
9.3	56.6	1.6	
9.0	58.5	42.9	K
9.5	33 3.9	56.2	
9.3	19.9	7.4	*R*
7.1	34 13.4	55.6	K
9.2	46.2	10.6	K
9.5	35 59.0	34.3	
8.9	36 8.4	38.0	
9.2	11.4	41.5	*B*
9.5	27.0	55.9	
4.0	37 6.0	29.9	K
9.5	24.5	9.9	
8.9	38 6.6	46.0	K
8.8	39 50.2	37.3	
9.2	40 11.7	59.2	*b*
9.4	56.1	19.0	
9.4	41 0.2	15.5	
9.5	48.1	36.0	
9.3	42 6.6	34.5	*b*
9.3	44 17.9	16.6	
9.3	45 25.1	26.5	*b*
8.5	46 37.2	11.3	K
9.5	47.6	26.9	
9.5	47 20.5	59.8	
7.8	35.2	53.4	K
9.5	39.7	10.3	
9.0	45.1	13.7	K
9.5	52.2	26.2	
9.4	48 27.0	10.5	*aB*
8.5	41.4	33.1	K
7.8	49 13.6	34.7	K
9.1	18.7	56.8	*a*
	+	+	
10pr.	*32.10*	*2.62*	

381—440

	2ᵐ—3ᵐ	+9°	
m	′ ″	′	
8.3	49 32.1	53.2	K
7.7	50 35.6	37.9	K
8.0	51 29.2	38.6	K
8.2	51.7	2.9	K
8.8	52 0.6	55.1	K
9.3	1.3	2.4	
7.8	59.6	40.7	L
9.0	55 17.7	32.4	
9.4	56 5.3	10.9	
8.8	12.8	5.9	*Kb*
9.5	38.6	42.4	
9.1	55.9	1.5	*a*
9.4	57 28.4	44.8	
9.0	51.2	19.6	K
8.7	58 13.0	6.2	K
9.5	59 58.1	15.1	
7.5	0 1.1	22.3	K
8.8	40.4	53.0	
9.5	47.5	0.5	
9.5	54.2	50.7	
8.1	1 11.0	8.4	K
9.5	21.5	39.2	
9.5	35.1	13.7	
9.3	52.1	54.6	
9.4	2 17.6	15.6	*aB*
9.5	25.3	35.7	*aB*
8.3	29.6	7.9	*Kb*
7.0	59.1	27.5	K
9.0	3 9.2	26.2	K
9.5	55.7	18.5	
9.4	4 32.2	46.9	*R*
9.5	44.1	13.0	
8.8	53.2	24.1	
9.5	6 1.9	8.9	
8.5	8.6	53.8	K
9.5	32.1	54.2	
8.5	53.2	14.4	*Kb*
9.5	7 9.2	0.4	
9.5	8 17.0	3.0	
8.8	9 24.3	36.5	
9.1	34.9	21.6	K
9.3	40.2	45.5	
9.5	10 43.0	3.1	
9.5	12 3.6	7.2	
9.5	44.4	33.5	
9.5	45.7	26.9	
7.8	13 27.9	8.2	K
8.8	14 6.7	8.7	K
9.5	7.6	27.9	
9.5	33.7	58.9	
9.3	34.2	5.4	
9.5	15 27.2	41.7	
9.5	16 8.0	56.5	
9.5	15.7	34.5	
9.3	50.1	25.9	
8.0	55.6	17.6	*Kb*
8.2	17 7.2	29.9	K
8.7	21.8	9.3	K
4.0	19 18.7	13.7	K
9.5	48.1	24.8	
	+	+	
10pr.	*32.33*	*2.32*	

441—500

	3ᵐ	+9°	
m	′ ″	′	
9.5	20 0.6	52.1	
9.2	21 35.9	25.8	*Rb*
9.5	39.0	11.2	
9.5	22 8.5	27.8	
9.5	24.4	48.3	
9.5	25.2	32.4	
7.5	33.0	57.3	L
9.4	41.7	47.2	
9.5	23 11.5	31.6	B
9.5	52.8	34.2	*B*
9.3	25 1.7	18.9	
9.5	34.7	45.3	
8.7	52.8	11.8	*Kb*
9.5	54.2	28.6	
8.9	56.1	44.5	B
9.5	26 49.5	36.5	
9.4	53.6	15.5	
9.5	28 21.1	51.4	
9.0	38.5	42.2	B
8.5	53.7	20.3	K
9.5	29 12.6	29.3	
9.3	44.2	18.3	
7.8	30 3.1	27.5	K
9.5	35.4	32.7	
9.5	36.1	6.5	
9.5	31 5.2	54.5	
8.8	11.6	10.3	K
9.5	40.4	5.6	
9.5	44.2	23.7	B
8.7	32 15.5	12.3	K
9.5	33 12.8	4.0	
6.8	39.7	37.2	K
9.4	34 1.2	53.8	
9.5	19.9	50.0	
9.3	52.1	59.0	
9.5	35 51.7	8.9	
9.0	36 20.4	13.7	
9.5	35.2	38.3	
8.6	43.7	43.4	*Kb*
9.1	54.6	36.5	*a*
9.5	37 5.7	27.5	
9.5	7.4	34.8	
9.4	12.5	44.0	
9.3	38 6.6	31.7	
9.0	49.2	26.9	
7.7	39 4.8	4.7	L
8.8	41.3	56.5	K
9.5	46.9	10.3	
9.5	47.9	4.7	
9.4	40 5.3	29.7	*aB*
9.4	10.2	39.0	
9.0	15.4	42.4	*B*
9.5	37.9	14.8	
6.5	38.6	11.0	*Kb*
9.3	38.6	28.6	*aB*
9.0	41 14.6	54.9	
7.8	54.9	26.1	*Lb*
9.5	55.2	13.0	
8.3	42 14.7	28.3	
9.5	33.3	49.7	
	+	+	
10pr.	*32.51*	*2.00*	

345*a*

9.5	31	38.8	38.0

441*a*

9.5	20	48.1	17.2

492*a*

9.2	40	24.4	40.1	*B*

501 — 560

	3ᵉ—4ᵉ	+9°	
m	′ ″	′	
9.4	42 36.2	22.2	αB
9.0	43 26.5	36.5	K
9.5	27.7	51.0	
9.5	44.6	54.7	
9.1	47.7	28.2	α
9.5	44 35.4	47.3	
8.3	53.2	32.4	K
9.5	45 31.1	43.4	
9.5	46 4.7	54.2	
9.5	4.7	27.5	
9.3	47 3.2	20.4	
8.5	43.4	29.1	Kb
9.5	48 8.5	3.7	
9.4	29.2	3.1	
9.5	31.7	35.2	
9.0	49 0.0	54.2	
9.5	13.1	43.1	
9.3	24.2	50.3	
9.4	38.1	50.0	
8.7	50 0.0	56.5	K
9.0	3.7	12.3	K
9.5	16.4	48.7	
8.0	51 5.7	23.0	K
6.9	44.1	54.9	K
8.3	52 38.6	45.5	K
9.5	52.2	19.3	
9.5	53 15.5	58.2	
5.8	52.6	35.1	K
9.5	58.4	14.4	
9.2	54 3.4	43.4	
9.5	56 47.2	57.8	
7.2	57 47.7	38.4	K
9.5	58 9.4	59.5	
9.5	34.8	17.3	
9.5	38.2	57.5	
9.5	59 10.9	18.4	
9.5	35.0	1.2	
9.3	38.4	30.6	αB
9.5	47.0	15.4	
9.5	47.3	8.2	
9.5	0 9.0	34.0	
9.5	38.0	21.7	
6.5	48.3	42.0	Kb
9.5	1 32.4	23.6	
9.5	3 27.9	55.0	
8.0	4 21.8	17.3	Kb
9.5	41.4	1.8	
9.5	5 32.9	17.0	
7.2	39.3	50.6	K
5.7	6 41.8	37.8	K
9.4	8 0.8	14.5	
9.5	14.8	58.2	
9.5	41.4	36.5	
9.3	9 1.3	17.3	α
9.2	52.9	20.5	
9.1	10 13.3	21.8	Kb
9.5	19.2	11.1	
7.3	32.0	7.7	K
9.5	54.3	39.9	
9.5	11 3.8	47.0	αR
10pr.	+ 32.63	+ 1.73	

561 — 620

	4ᵉ	+9°	
m	′ ″	′	
9.5	11 4.1	20.8	B
6.5	42.8	45.9	K
9.5	12 33.9	14.5	
9.5	13 15.9	29.3	
9.5	28.5	33.1	
9.5	45.1	8.9	
8.4	14 55.9	25.7	K
8.6	15 5.7	3.1	K
9.5	46.8	59.9	
5.2	57.6	7.8	K
8.3	16 46.8	43.1	K
9.5	17 0.0	57.3	
9.5	26.8	4.5	
9.5	36.7	35.2	
9.0	47.8	24.3	K
9.5	18 10.9	12.8	
9.5	40.3	24.3	
8.3	43.1	3.5	K
9.2	19 50.5	11.6	K
9.2	50.5	12.6	K
9.4	52.1	58.3	
9.1	52.5	7.6	K
8.3	54.7	40.6	K
7.8	20 6.4	44.5	K
var	21.0	50.2	B
var	21 16.5	37.2	
9.5	29.0	13.1	
9.5	32.9	32.2	
9.5	52.0	37.5	αB
7.0	22 4.4	55.9	K
9.5	8.0	43.9	
9.5	23 39.8	18.4	
9.5	57.8	8.0	
9.3	24 9.9	48.4	
9.3	18.9	36.6	αBb
9.5	23.8	36.6	αB
9.3	26.5	9.8	
9.4	31.3	35.1	
9.3	25 18.4	35.1	
6.8	54.8	5.9	K
9.5	59.3	21.8	
8.5	26 31.6	42.4	K
9.5	27 22.5	7.9	αB
9.5	23.9	1.0	
9.5	27.9	56.3	
8.5	37.9	53.5	K
4.3	41.6	53.0	K
9.5	28 27.0	32.0	
9.5	46.7	17.6	
9.5	54.3	41.7	
9.4	29 7.8	18.0	
9.5	10.9	41.8	
8.8	12.9	5.2	K
9.5	24.0	56.2	
9.5	31.9	12.4	
9.2	33.8	44.5	b
9.5	30 27.9	38.6	
9.5	39.3	16.6	
9.0	45.4	53.2	K
9.0	31 3.9	21.5	K
10pr.	+ 32.76	+ 1.38	

621 — 680

	4ᵉ	+9°	
m	′ ″	′	
9.1	31 46.7	35.4	K
9.5	59.9	27.4	
9.5	32 17.4	8.6	
9.5	29.7	13.4	K
9.3	42.5	54.4	
9.5	33 16.4	29.5	
9.3	26.3	57.4	Rb
7.3	34 19.8	22.2	K
9.5	34.3	49.5	
9.4	42.7	18.1	
9.5	35 8.4	8.3	
8.8	12.0	21.8	K
8.8	15.9	36.9	
9.4	22.7	53.8	
9.5	34.9	18.8	
9.2	42.9	10.1	
9.5	47.2	10.1	
9.0	36 22.9	24.7	
9.3	41.4	34.6	
9.5	44.6	1.2	
9.4	44.7	6.3	
9.0	50.9	16.7	Kb
9.1	55.9	22.3	α
9.5	58.0	38.2	
9.5	37 4.7	33.7	
8.6	6.4	13.1	K
9.5	43.3	52.0	
9.2	45.9	59.9	K
9.5	38 14.8	21.2	
9.5	35.4	37.5	B
7.5	39 8.9	47.2	K
9.5	22.8	24.3	
9.5	33.1	11.2	
9.5	35.0	14.8	
8.5	35.1	54.8	K
9.5	46.5	6.0	
9.5	40 5.0	49.0	
9.5	7.6	8.7	
9.4	48.1	31.3	
9.5	50.3	24.3	
9.5	41 51.9	38.5	
8.6	42 0.8	14.5	Rb
9.1	22.9	18.0	α
9.5	59.9	3.8	
9.5	43 7.4	38.8	
9.3	14.7	39.9	αB
9.5	23.8	20.8	
6.2	44.7	44.5	L
7.8	57.9	37.5	L
9.5	44 5.3	13.4	αB
8.1	25.3	5.4	B
9.4	33.2	59.0	
8.7	33.7	35.4	L
9.5	45 10.8	28.4	
9.0	31.9	15.6	K
9.0	41.8	19.8	
9.0	45 42.3	20.4	
9.5	46 5.4	25.7	
9.5	10.0	46.1	
9.5	22.8	39.6	
10pr.	+ 32.82	+ 1.15	

681 — 740

	4ᵉ—5ᵉ	+9°	
m	′ ″	′	
9.5	46 40.9	0.8	
9.0	41.5	54.3	K
5.3	55.6	56.5	K
9.5	47 3.9	48.7	
9.5	13.8	15.9	
9.0	28.0	58.4	K
9.2	33.0	57.0	K
9.1	48 3.5	57.7	K
9.1	10.9	58.6	K
9.3	41.4	59.3	K
9.0	49 7.3	31.5	
9.5	11.1	38.9	
9.3	11.9	49.3	
9.3	57.4	16.3	K
9.5	50 0.0	12.7	
9.5	7.8	25.4	
9.0	16.3	45.9	
9.5	51 27.1	41.4	αB
9.5	33.4	15.6	
9.5	37.8	57.9	
9.5	52 17.9	34.5	
9.5	18.0	10.1	
9.5	18.9	45.3	
9.5	19.9	50.5	
8.2	22.9	27.8	P
9.5	48.8	3.3	
9.5	53 26.3	5.6	
9.2	38.9	59.7	
9.3	49.1	59.7	B
9.1	56.9	36.1	α
8.5	54 34.8	26.8	
9.5	51.0	20.4	
8.0	55 6.7	10.1	K
9.4	10.0	35.7	
9.4	13.2	6.8	
9.3	13.2	9.1	αB
9.4	15.6	27.9	αB
9.0	16.8	49.3	K
9.5	56 10.9	4.0	
9.5	27.7	58.8	
9.4	34.5	38.4	αB
9.5	44.8	46.3	
9.5	50.8	15.3	
9.5	53.3	12.8	
8.9	57 17.6	2.1	
9.5	34.0	40.0	
9.5	43.0	0.4	
9.5	58 25.2	12.3	
9.3	27.5	17.8	
9.5	35.2	58.4	
9.5	59 5.0	36.1	
9.0	13.7	17.0	P
9.5	26.1	54.0	
9.5	30.4	58.5	
9.5	37.9	46.0	
6.8	42.0	17.8	P
9.3	51.3	8.4	
8.8	0 5.9	10.0	K
9.5	29.2	53.6	
9.5	55.5	1.0	
10pr.	+ 32.86	+ 0.95	

741 — 800

	5ᵉ	+9°	
m	′ ″	′	
9.5	1 7.0	39.2	
9.3	9.7	14.2	
6.0	21.9	38.1	K
9.5	22.7	13.2	
9.5	22.9	33.3	
9.3	32.1	43.8	K
8.7	2 1.3	17.2	
9.2	1.4	10.2	
8.2	1.7	2.2	K
9.5	9.0	4.7	
8.0	9.1	46.0	Kb
9.5	23.5	26.7	
9.5	52.4	20.4	αB
9.5	3 26.6	59.3	
9.4	37.1	39.8	
9.5	4 24.2	20.7	
9.4	38.0	0.4	
9.5	38.1	12.9	
9.5	53.2	16.2	B
9.1	57.5	10.8	
9.4	59.4	0.6	
9.2	59.7	49.0	Kb
8.6	5 1.4	54.7	K
9.5	3.0	37.6	
9.5	37.0	29.0	
9.3	44.3	1.4	
9.4	53.4	1.1	
8.7	56.8	31.7	L
9.4	57.3	2.0	
9.5	57.5	9.5	
9.4	6 2.8	6.9	
9.5	3.9	33.3	
9.0	28.8	19.3	
9.5	31.7	41.0	
9.4	33.3	31.5	
9.5	43.7	18.3	α
9.5	7 2.1	49.9	
9.2	3.7	19.4	α
9.5	20.6	55.2	
9.4	34.7	13.7	
9.0	8 5.4	39.6	
9.4	5.9	5.1	
9.5	22.5	8.6	
9.5	33.7	38.2	
9.5	44.4	34.2	
9.5	56.8	56.4	
9.5	9 0.6	38.7	
9.5	6.1	12.6	
7.6	6.3	45.8	K
9.5	16.4	40.9	
9.5	27.0	48.1	
8.5	59.5	57.2	
9.5	10 13.6	42.1	
7.8	15.3	3.2	K
9.5	45.4	56.5	
8.6	45.7	51.7	K
9.3	48.4	5.3	
9.5	49.8	28.1	
9.4	50.0	20.0	B
9.5	53.6	34.2	
10pr.	+ 32.89	+ 0.78	

801—860					861—920					921—980					981—1040					1041—1100				
	5ᵐ		+9°			5ᵐ		+9°			5ᵐ		+9°			5ᵐ		+9°			5ᵐ—6ᵐ		+9°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.5	11	18.5	3.4		9.5	24	7.0	30.7		8.0	32	50.1	10.4	K	9.5	42	41.4	33.9		9.0	52	6.0	14.3	
9.4		31.1	29.1		9.3		8.2	44.7		9.1	33	15.1	27.7	*a*	9.3	43	0.1	50.3		9.3		6.1	21.5	
9.3		42.3	27.1		9.5		11.5	29 0		9.5		20.5	52.1		9.5		0.5	33.1		8.7		20.0	40.4	
9.5	12	41.5	32.4		9.5		18.9	13.3		9.5		21.1	11.1		9.5		14.1	14.7		9.3		26.9	12.4	
9.0		51.2	11.4		8.6		34.4	58.0		7.5		29.4	7.1	K	9.5		41.7	40.1		9.0		27.7	4.8	K
7.0		56.6	34.7	*B*	8.6		35.4	33.2	L	9.1		35.6	5.1	*aB*	9.5	44	6.4	3.6		9.0		38.4	6.2	K
9.2	13	6.2	45.3		9.4		56.4	54.0		9.1		41.2	32.5	*ab*	9.2		16.0	22.3		9.5		39.0	42.0	
8.9	14	4.1	55.1	B	9.2		58.7	59.9	B	9.3		46.8	39.3		8.7		22.1	8.5		9.1		55.3	53.0	K
9.5		7.2	32.9		9.3	25	2.1	13.3		9.5		59.3	46.3		9.5		22.5	16.0		9.2	53	0.9	18.0	
9.5		23.3	8.9		9.5		21.4	11.9		9.5	34	23.6	31.6		9.2		26.9	22.8		9.4		3.2	33.0	*aB*
8.6		42.0	5.2		9.4		46.9	33.7		9.3		53.9	49.4		9.5		40.0	20.0		9.5		5.9	1.1	
9.5	15	6.0	25.9		9.4		49.7	50.9		9.4	35	2.5	16.5		8.7		49 9	47.4	K	9.5		9.2	34.9	
9.5		8.5	32.5		9.4		50.4	39.4		9.0		5.8	37.4		9.5		50.0	23.8		9.5		10.0	29.3	
9.5		19.3	23.6		9.4		51.3	58.0		9.4		23.0	56.9		9.4	45	15.7	43.6		9.5		16.0	38.5	
9.5		23.0	26.2		9.5		56.1	22.3		9.2		23.5	49.6		8.0		20.8	31.6	K	8.0		21.0	3.7	K
9.3		39.9	16.2		9.2	26	43.8	30.5	*a*	9.5		26.7	10.9		9.4		24.7	5.3		9.4		34.3	58.6	
9.4		47.7	33.5		5.0		52.9	22.9	K	9.3		36.0	12.6		9.5		32.4	3.2		9.5		39.1	10.3	
9.5	16	8.2	34.5		9.2	27	1.7	21.5		9.5		37.2	4.2		9.5		44.7	19.9		9.5		49.2	43.9	
9.0		26.1	21.2		3.5		9.9	49.5	L	8.6		39.0	57.6	*Kb*	9.5		49.1	58.5		9.3		56.4	53.6	
9 5		36.1	33.9		9.3		10.0	56.3		9.5		42.4	48.0		9.5	46	2.0	55.4		9.1	54	0.3	34.0	K
8.2		37.9	1.7	K	8.0		15.1	30.8	K	9.0		46.7	50.8	K	9.5		3.0	27.6		9.3		8.9	58.5	
9.5		46.2	34.0		8.1		15.6	35.4	K	9.4	36	4.0	27.1		9.5		9.4	3.7		9.3		11.3	30.1	
8.3	17	0.9	51.0	K	8.0		16.1	40.1	K	9.5		25.9	52.4		9.3		37.8	35.9		9.4		22.4	45.1	
9.5		6.4	4.8		8.2		17.3	4.5	*B*	9.5		50.1	8.3		9.5		44.0	41.9		5.0		25.0	38.6	*Kb*
9.5		15.6	14.0		9.3		38.0	36.1		9.5		55.8	45.0		8.9		45.3	14.0		9.0		37.2	41.3	K
9.5		19.6	19.3		9.5		55.5	26.0		9.5		56.5	12.3		9.5	47	0.9	33.4		9.5		54.7	19.0	
9.5		35.1	43.2		9.3		59.9	36.7		9.3	37	9.3	58.0		9.5		2.1	17.2		9.5		59.5	45.2	
9.5		36.5	25.5		8.8	28	0.4	26.2		9.4		9.3	32.5		9.4		48.3	19.9		9.5	55	3.1	25.3	
9.5		37.7	38.9		9.0		4.6	44.1	K	9.5		29.7	15.4	*a*	9.4		49.9	33.3		9.5		9.2	29.0	
8.5		45.6	5.6	K	9.4		14.7	56.3		9.0		36.4	15.0		9.5		59.7	34.5		9.5		11.1	23.3	
8.7	18	0.7	19.4		9.5		19.0	44.5		9.4		38.8	39.3	*a*	9.5		59.9	52.4		8.8		11.7	0.9	
9.0		16.1	24.0		8.9		25.2	39.2	K	9.2		44.3	58.9		9.5	48	5.5	8.0		8.6		20.7	8.8	L
9.5		20.4	17.6		9.0		32.0	32.1		8.2	38	51.4	36.7	*B*	9.4		6 7	44.1		9.5		25.1	5.5	
9.5		30.0	29.9		9.5		34.8	58.2		6.0		55.1	28.2	*B*	9.5		10.0	28.3		9.5		28.8	49.5	
9.0		34.5	33.5	K	9.5		35.4	29.7	*a*	8.8	39	8.0	28.7		9.3		28.3	50.0	*aB*	9.4		34.3	39.8	
9.3	19	3.4	34.9	K	9.0		37.0	45.8	K	9.0		24.6	41.8		6.5		31.2	29.3	K	9.5		45.3	29.7	
9.5		18.6	46.9		8.9		46.8	46.7	K	9.5		53.2	3.7		9.4		39.7	1.9		9.0		50.1	18.6	B
9.5		34.0	5.3		4.6		57.1	12.4	K	9.5	40	2.1	17.6		8.9		39.8	28.6		9.1	56	1.6	20.3	*a*
9.3		50.4	36.1	*aB*	9.5	29	27.0	41.4		9.4		10.0	28.0	*a*	9.3	49	14.3	5.8		9.5		51.5	1.0	
9.3	20	0.0	57.9	K	9.3		29.6	11.1		9.5		11.2	56.3		8.8		36.2	33.5	K	9.0		51.7	33.4	
9.5		1.7	2.0		9.3		37.4	52.3		9.5		20.1	21.2		9.5		46.5	43.2		9.0		57.6	35.1	
9.5		17.8	0.4		9.3		38.0	32.5		9.4		32.6	2.5		9.4		51.3	31.4		9.5	57	2.0	9.8	
9.5		40.0	8.0	*a*	9.5		49.5	34.7		8.9		37.1	26.7	K	8.9	50	6.2	55.1	K	9.5		21.0	38.1	
9.5		40.4	38.7		9.3		56.4	6.4		9.5		37.7	18.8		9.5		9.1	35.2		9.1		25.1	17.6	*a*
9.4		44.9	37.2		9.0	30	0.1	10.9		9.4		53.1	27.4		9.1		9.3	15.0	*a*	9.4		45.4	9.5	
8.3		56.3	19.1	L	9.0		8.7	24.7	K	9.5		53.6	59.7		9.4		17.3	19.7		9.3		53.1	54.6	
9.5	21	14.4	11.3	*aB*	9.0		15.4	48.2		9.4		57.6	59.0	*aB*	9.5		19.0	59.5		8.7	58	1.3	52.7	K
9.3		35.4	23.9		9.5		50.3	54.6		9.2	41	2.3	4.6		9.3		30.4	37.3		9.0		23.1	10.8	K
9.3		38.0	17.0		9.0		55.6	22.3		9.5		3.7	55.4		9.5		41.4	35.8		9.5		25.2	36.0	
9.5	22	19.0	41.8		9.0	31	2.7	48.5		9.0		6.4	50.3	K	9.4		56.9	31.1		9.5		43.5	39.3	
9.4		28.2	31.0		9.5		9.7	48.5		9.5		13.6	5.9		9.0		58.2	21.8	B	9.4	59	8.9	4.8	
9.0		46.3	8.7		9.4		21.8	4.9	*aB*	9.3		18.8	34.9		9.5	51	4.4	17.8		8.0		12.9	10.8	K
9.3		52.7	0.0	B	9.5		26.6	13.4		9.5		19.6	37.5		9.9		4.9	27.6		9.3		18.8	29.9	
9.5		53.0	30.0		9.0		34.2	0.1	K	9.5		29.7	38.8		9.6		7.1	2.0		8.2		26.1	12.2	K
9.5		56.2	0.7	B	8.4		36.8	45.8	K	9.3		30.7	30.1		9.5		26.6	10.5		9.4		31.1	58.8	
9.3		58.2	8.1	*a*	9.5		57.7	36.9		9.5		49.6	35.9		9.6		29.4	30.1		9.5		46.0	30.7	
9.5	23	10.5	47.5		9.5	32	0.6	59.8		9.5	42	3.6	58.9	*a*	9.0		29.8	13.6		9.2		46.8	14.9	K
9.4		42.3	24.2		9.5		4.7	0.5		6.0		4.1	49.3	K	9.5		47.0	17.4		9.5		52.2	56.6	
9.5		43.6	40.9		9.4		7.4	33.9		9.4		29.0	0.3		9.4		49.9	12.9		9.5		55.3	26.2	
7.4		44.4	7.2	K	9.0		9.6	23.4		9.5		37.5	3.7		8.5		55.4	30.8	L	9.3	0	8.4	16.9	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*32.92*	*0.61*		*10pr.*		*32.93*	*0.46*		*10pr.*		*32.95*	*0.32*		*10pr.*		*32.95*	*0.17*		*10pr.*		*32.96*	*0.07*	

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	6ᵘ		+9°			6ᵘ		+9°			6ᵘ		+9°			6ᵘ		+9°			6ᵘ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	0	12.5	53.5		9.5	7	33.1	2.7	B	9.5	16	0.8	34.9	aB	9.5	26	8.8	4.3		9.2	33	3.0	35.2	aB
9.3		25.7	5.0		9.3		37.9	13.9		9.5		1.6	38.7	aB	8.7		21.6	11.2	L	9.4		3.9	41.2	
9.5		29.9	4.9		9.2		40.5	3.5	a	7.5		4.8	14.3	K	9.5		24.4	55.1		9.4		5.1	31.0	
9.5		38.3	2.2		9.5		56.7	58.7		9.0		6.5	23.5		8.0		27.8	11.6	L	8.1		11.8	36.3	L
9.5		39.5	28.8		9.4	8	6.6	11.4		9.4		31.1	2.0		9.5		44.0	42.8		7.0		13.8	7.0	K
9.5		40.3	22.5		8.1		22.0	4.2	K	9.5		34.3	52.0		9.5		45.7	55.4		9.0		15.5	44.1	
8.4		41.4	39.4	K	9.5		22.2	51.1		9.5		39.4	25.6		9.3		46.1	29.3	a	9.4		17.6	39.4	
9.5		52.7	3.3		9.5		36.0	4.8		9.5		42.5	30.5		9.1		46.1	52.2	K	8.7		21.4	21.0	
9.4	1	32.0	49.1		9.5		43.8	23.4		9.5		50.1	12.8		9.0		53.9	30.6		8.8		23.1	52.1	
9.5		50.5	36.5		9.5		45.3	34.9		9.5		56.6	6.6		9.5		55.8	50.4		8.3		28.7	59.0	K
9.5		58.1	52.7		9.5		51.4	2.5	aB	9.1		58.0	18.5	K	9.5	27	20.0	9.7		9.1		30.9	57.7	a
8.0	2	0.1	29.4	K	9.5		55.2	2.7	aB	7.8	17	19.3	14.3	K	9.2		21.7	44.5		9.4		34.7	27.0	
9.2		1.0	59.3	a	6.3	9	7.3	59.4	Kb	9.5		24.9	40.7		9.2		24.9	57.2	K	9.3		35.6	59.5	
8.7		6.1	38.6	K	9.5		9.2	57.2		9.5		39.5	4.5		9.4		31.6	11.6		9.5		42.2	11.2	
8.5		11.6	10.1	K	9.5		12.5	0.2		9.5		55.4	48.7	b	8.6		41.6	57.6	K	9.5		42.8	55.4	
9.5		18.6	9.8		9.5		12.8	49.5		9.5	18	15.4	52.9		9.5		52.0	57.0		9.1		52.2	38.9	a
8.7		21.8	33.9	K	9.5		18.0	34.8		9.4		21.5	7.6		9.3		55.2	23.9		9.4		54.4	20.3	
9.3		32.5	20.1	aB	9.5		22.4	56.5		9.3		45.0	45.2		9.3	28	24.4	14.9		9.5	34	17.4	40.9	
9.5		44.2	10.5		9.5		47.8	42.9		9.5		47.0	3.1		9.5		47.4	39.2		9.3		31.5	35.2	
8.5		56.3	1.8	K	9.4		47.8	53.4		8.6		47.3	8.6		9.4		50.0	49.0		9.5		33.9	21.4	
9.5	3	10.7	39.8		9.1		59.2	34.5	K	9.5		54.5	59.1		9.5	29	13.1	39.4		9.5		35.6	54.2	
9.0		15.6	38.2		8.3	10	7.9	22.2	K	9.3		56.9	31.4		9.5		23.8	31.6		9.5		39.0	7.1	
9.5		33.1	59.4	B	9.3		37.0	18.0		9.3	19	13.8	27.5		8.3		26.2	28.6	K	9.4	35	15.9	30.0	
8.7		36.6	39.5		7.0		44.3	6.2	L	8.2		23.8	18.0	L	9.4		27.5	12.3		9.5		16.0	51.3	
9.2		37.5	21.8		9.5	11	26.4	39.5		9.5		41.6	17.8	a	9.5		35.0	49.2		9.4		42.2	0.1	
9.5		42.7	22.9		9.5		29.1	18.3		9.5		43.4	55.7		7.8		36.0	15.4		9.5		52.7	36.0	
9.5		52.0	30.4		9.5		31.0	29.4		8.0		45.9	42.4	L	8.5		41.6	2.6		9.5		53.7	51.6	
9.5	4	3.7	49.6		8.8		34.0	4.4	K	9.5		47.0	31.9		9.4		44.7	10.4		9.2		57.1	19.3	aB
9.5		5.6	28.7		9.1		44.5	11.6	a	9.5		57.0	8.8		9.3		55.9	22.8		8.7		58.4	12.1	K
9.5		18.2	0.2		9.5		51.0	41.6		9.0	20	50.9	39.1	K	9.0		56.9	3.0		9.0		59.1	7.8	K
8.9		19.3	31.8	K	9.5		51.0	14.8		9.4	21	0.8	3.3		9.5	30	2.9	11.6		9.4		59.8	18.2	
9.5		42.1	27.8		9.5		56.7	43.6		9.5		6.8	44.5		9.5		6.0	24.7		9.3	36	10.0	29.2	
9.2		52.5	7.3		9.5	12	1.0	52.1		9.5		12.7	51.0		9.5		11.6	36.4		9.0		44.1	36.0	K
8.3		59.2	4.7		9.4		23.6	10.9		9.5		38.5	5.6		9.5		33.5	53.2		8.7	37	16.2	50.0	K
9.4	5	1.2	54.2		9.3		40.7	42.2		9.5		54.1	53.6		9.5		34.2	32.8		9.5		22.1	22.2	
9.5		13.8	40.4		9.2		42.5	0.8	K	9.5		57.2	14.0		9.2		38.3	34.0		7.5		27.5	54.9	K
9.5		16.4	51.4	aB	8.5		45.7	1.1	K	9.5		58.7	36.0		8.7		40.9	17.0		9.4		32.9	12.0	
8.2		17.9	38.8	K	9.5		48.6	25.4		9.5	22	10.0	29.4		9.5		44.3	5.2		9.3		54.9	15.6	
9.5		27.9	51.2	aB	8.7	13	1.8	47.7	L	6.9		10.1	6.7	K	9.4		50.0	36.3		9.5	38	12.3	21.1	
9.3		30.5	7.0		8.7		4.9	49.7	L	9.2		12.8	3.6	K	9.5	31	7.3	48.6		9.4		25.8	15.2	
7.9		32.0	39.4	K	9.4		8.2	29.7		9.4		27.3	26.9		8.5		12.9	39.2	Lb	9.5		29.0	46.4	
9.5		34.5	58.4		9.5		14.8	51.4		9.2		29.8	7.0	K	8.1		13.3	46.8	L	7.7		36.4	20.9	L
9.5		45.2	6.8		9.4		56.7	24.6		8.7		31.1	20.5	K	9.5		29.6	49.8		9.4		41.6	25.3	aB
9.4		49.9	55.8		9.5		59.3	3.3		9.5		37.7	55.6		8.0		37.6	52.6	K	9.0		55.9	10.8	K
8.9		54.3	18.3	B	9.5	14	8.6	38.3		9.4		53.2	51.9		9.5		55.5	29.9		9.5		57.6	35.4	
9.5	6	5.5	40.8		9.4		10.8	24.1	aB	9.5		58.1	54.3		9.5		55.8	35.7		9.5	39	27.4	8.2	
9.2		7.8	11.2		8.0		12.5	12.7	B	9.5		59.9	7.0		9.5	32	7.0	31.1		9.5		43.9	23.9	
9.2		9.9	17.3		9.4		13.1	5.6		9.5	23	8.4	31.9		8.3		9.7	26.1		9.4	40	5.2	18.1	
9.1		11.9	17.0	a	9.5		16.3	23.1		8.8		16.0	53.4	K	9.5		23.1	49.6		9.5		13.7	17.5	
9.3		12.0	31.6		9.5		26.7	44.0		9.5		25.3	43.7		9.2		25.8	53.6		9.5		15.0	36.5	aB
9.5		17.2	40.8	R	8.8		45.6	11.4		8.5		34.8	18.3	K	8.5		30.2	56.9	K	9.1		40.0	31.7	ab
9.0		38.7	47.2		9.3		46.7	14.0		9.2		40.0	35.0		8.5		39.0	54.9	K	9.3		43.2	56.5	
9.5		54.1	44.7	B	8.7		57.7	24.6		9.0		45.3	11.4		8.7		39.0	43.6		7.5		48.7	1.2	K
9.5		57.5	45.0	B	9.5	15	2.4	0.1		9.2	24	18.7	15.0		8.2		43.5	47.3	K	9.3		54.8	12.3	
9.5		58.3	10.3		9.3		10.8	20.8		9.0		37.4	35.6		8.8		44.6	54.0		9.3		57.4	42.2	
9.5	7	4.4	39.1		9.5		38.9	59.6		9.5	25	7.0	36.2		9.5		50.0	59.3		8.3	41	26.5	44.8	K
9.5		10.2	14.1		9.5		43.2	45.0		8.7		49.1	16.9	L	9.2		51.0	29.9		8.5		37.2	47.4	K
9.2		21.9	5.8		9.5		52.7	30.3		9.5		54.4	35.2		9.3		53.2	59.7		9.5		37.8	4.5	
9.5		23.0	58.8		9.3		55.9	23.2		8.9		59.3	13.5		9.5		58.5	41.8		9.3		55.0	4.0	
8.8		24.8	48.2		9.5		56.6	8.5		9.5	26	4.5	51.4		9.4	33	2.0	35.9		9.4	42	18.8	15.3	
10pr.		+ 32.96	− 0.06		10pr.		+ 32.95	− 0.17		10pr.		+ 32.95	− 0.30		10pr.		+ 32.94	− 0.44		10pr.		+ 32.93	− 0.52	

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ		+9°			6ᵐ		+9°			6ᵐ—7ᵐ		+9°			7ᵐ		+9°			7ᵐ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	42	18.9	4.5		9.3	50	51.8	48.9		9.5	59	51.4	12.3		8.6	7	9.4	6.0	K	8.9	17	36.0	3.3	K
9.5		28.4	23.7		9.0	51	5.0	5.8		9.3		55.0	4.4		9.5		25.3	10.9		9.4		36.7	19.4	
9.5		31.0	52.0		9.4		6.3	51.5		9.5		59.4	47.1		7.7		35.0	45.2	K	5.4		43.4	33.7	Kb
8.6		42.0	25.6	K	9.0		10.4	54.9		9.5	0	0.5	51.7		9.5		49.2	2.5		9.5		55.5	45.4	
9.5		55.2	48.3		9.2		11.8	41.4	Kb	9.5		3.1	58.4	a	9.5		56.3	31.2		9.4		57.1	27.3	
9.5		56.8	33.7		9.0		20.7	2.3		9.5		5.0	25.2		8.3	8	0.6	58.3	K	9.5	18	12.0	54.8	
9.5	43	1.9	25.2		9.4		33.8	30.7		8.9		7.8	10.2		9.5		6.9	48.0		9.5		17.2	15.4	
9.5		5.4	9.4	aB	9.5		35.9	18.4		9.5		41.8	59.2		9.5		13.9	4.6		8.9		27.5	59.8	
9.3		18.2	25.5		9.5		36.8	39.2	aB	9.5		41.8	28.3		9.5		15.2	20.5		9.2		33.8	10.3	
8.8		19.6	12.5		9.5		39.8	26.3		9.5		48.3	59.2		9.1		17.8	54.2	a	9.5		58.7	40.3	
9.5		23.2	38.1		9.5		43.4	45.1		8.9	1	0.7	56.4		8.3		38.6	35.8	L	9.4		59.2	3.2	
9.4		27.0	4.4		9.5		49.5	52.1		9.5		2.0	5.5		8.5		45.0	5.9		9.5	19	0.2	47.8	
9.5		32.7	8.4		9.4		54.4	35.9		9.4		3.2	31.2		9.3		47.7	26.6		9.5		4.1	43.3	
7.7		38.9	36.9	Kb	9.5	52	7.3	53.4		9.4		6.5	52.0		9.5		50.8	13.6		9.4		5.2	0.4	
9.2		40.5	0.7		9.0		13.9	12.3		9.5		11.7	7.8	aB	8.5		55.0	36.8		8.0		10.2	19.9	K
9.4		44.4	56.8		9.5		36.5	58.3		9.2		20.4	17.2	a	9.3		55.5	9.8		9.5		20.7	53.0	
9.5		46.6	45.6		9.1		38.0	33.7	ab	8.7		22.7	4.9	L	7.8	9	3.8	42.8	K	8.2		28.7	2.4	K
9.3		46.9	51.0		9.5		57.1	21.6		8.5		35.4	18.2		9.0		4.9	1.4		9.5		56.5	43.3	B
9.5	44	17.8	19.3		9.5	53	12.3	12.1		7.4		54.5	32.4	K	9.0		11.3	49.9	S	9.4	20	1.7	40.6	a
9.5		27.3	36.6		9.4		32.7	55.4		9.3		57.6	30.3		9.5		13.0	8.7	aB	5.0		16.3	12.8	K
9.5		28.9	46.9		8.5		41.8	55.1	K	9.0	2	2.1	54.8	K	8.5		36.2	27.7	L	8.7		16.3	48.3	B
9.5		39.7	8.8		9.5		43.0	35.5		8.9		6.4	8.1	B	9.4		38.8	25.4	aB	9.5		25.0	52.1	
9.5		58.6	50.9		9.2		44.4	27.8		9.5		28.2	27.7	aB	7.3		43.6	33.3	K	9.4		25.5	52.5	aB
9.0	45	13.6	58.1	Kb	9.5		49.7	57.3		9.5		31.0	30.7		9.5		45.1	59.5		9.5		37.1	37.6	
9.5		14.1	19.1		9.5		55.9	57.6		9.5		35.7	56.6		8.5		46.9	3.4	K	9.5		40.8	10.0	
9.5		15.3	25.3		9.3	54	10.4	7.7		9.5		40.6	3.0		9.5		59.9	30.3		9.5		49.8	34.8	
9.5		37.7	58.7		9.2		10.9	45.8	aB	8.1		43.6	0.8	K	9.5	10	13.3	40.6	a	8.8		52.4	55.9	
9.5	46	13.4	17.2		9.5		14.4	48.3		9.2		48.8	27.7	aB	9.5		23.5	9.0		9.5	21	8.8	9.4	
8.8		29.5	38.5		8.8		14.8	5.5		8.5		48.9	17.8	K	8.9		38.5	6.3	K	9.0		10.0	4.0	K
8.9		34.4	40.1		9.3		22.6	53.3		8.0		53.8	36.8	K	9.3	11	3.6	54.2		9.2		12.3	57.4	
8.9		37.3	35.5		9.0		31.0	24.0		9.5	3	6.0	32.4		9.0		7.4	13.9		9.5		25.2	36.4	
8.7		57.2	40.8	S	9.3		38.2	13.8		9.5		6.3	14.2		9.4		19.8	9.7		9.4		43.4	11.1	
9.5		59.8	52.6		9.3	55	14.5	47.9		9.5		6.7	43.0		8.3		26.7	2.5	K	9.3		47.5	7.4	
9.5	47	2.7	0.7		7.7		17.8	14.2	K	9.5		9.9	55.8		9.2		28.6	42.0	b	9.5	22	4.3	41.3	
8.5		14.5	49.9	K	9.2		17.9	30.7		9.5		50.0	23.9		9.4		46.7	8.9	aB	9.5		16.6	5.7	
9.5		26.0	33.7		6.5		22.7	20.8	K	9.1		57.1	2.3	a	9.0		48.1	8.7	B	9.2		19.1	25.0	b
9.4		32.6	37.6		9.5		28.0	47.6		9.5		57.8	21.7		9.0		56.8	30.8		9.2		36.2	36.7	
9.2		39.7	39.2		9.0		51.0	15.3		9.5	4	20.9	36.0		9.5	12	21.7	45.5		9.4		37.9	15.1	
8.3		46.8	10.5	K	9.5	56	7.8	42.4		9.5		23.2	56.7	aB	8.7		38.6	2.0	K	9.5		54.0	23.2	
9.3		47.8	7.6	B	9.3		19.5	41.6		9.0		24.1	28.0		7.6		53.3	55.2	K	8.8		54.3	54.1	K
9.1		51.5	33.6	a	9.5		32.6	54.6		9.5		40.0	35.3		9.5	13	10.0	3.4	aB	9.5		55.2	31.2	
7.7		53.0	3.0	B	9.5		44.7	19.4		9.4		43.2	37.3	aB	9.0		31.5	24.2		9.5	23	16.0	55.3	
9.5		56.8	29.6		9.5		50.4	46.4		9.5		48.7	31.6		8.5		38.5	10.3	K	9.5		20.7	44.9	aB
9.5		57.0	0.8		9.5		54.3	36.5		9.5	5	1.9	50.1		9.5	14	5.7	1.5		9.5		22.5	16.2	
9.2	48	7.5	29.4	aBb	9.5	57	8.0	1.0		9.5		18.4	59.6		9.5		13.9	39.2		9.5	24	9.6	17.5	
9.4		11.6	42.8	B	9.5		19.4	22.2		9.5		23.0	30.1		9.5		30.0	33.9		9.5		18.4	4.0	
9.5		18.9	14.2		9.4		25.8	22.6		9.4		28.1	28.6		9.0		31.0	9.0		9.0		23.7	56.7	
9.0		31.5	41.6		9.3		27.3	50.8	b	8.2		28.6	15.0	K	9.0	15	25.9	27.4		9.5		34.0	3.8	
9.5		34.8	50.0		9.2		31.0	7.1		9.5		41.5	47.6		9.5		26.7	45.5		9.5		34.8	35.5	
9.3		36.9	57.7		6.6		42.6	24.1	K	9.2		51.8	39.7		9.0		28.4	55.5		9.5		43.6	40.4	
9.5	49	8.8	36.6		9.1		50.0	34.9	a	8.0		55.4	42.8	L	8.9		30.2	0.4		9.5	25	8.1	35.0	
9.0		11.7	16.5	K	9.4		50.4	12.5		9.2		58.4	19.8	K	9.4	16	13.6	1.7		9.4		10.1	23.6	
9.0		13.4	11.7		9.2	58	4.8	19.3		9.2	6	0.2	16.1	K	9.3		18.7	10.2		8.7		23.4	29.2	L
9.3		27.7	30.8		9.3		9.7	16.4		9.0		16.7	8.5		9.2		29.3	26.3	K	8.1		24.8	37.8	L
9.5		29.2	2.6		9.5		11.5	33.2		9.5		18.0	0.3		8.0		39.9	22.8	K	9.4		38.0	23.4	
8.7		47.9	47.0	K	9.5		44.6	53.8		9.3		19.1	31.2		9.2		59.6	23.2	K	9.4		40.2	18.8	aB
9.4		58.6	27.0		9.2		45.1	16.6		9.2		23.1	53.4		8.8	17	3.5	40.2		9.3		45.0	55.4	
9.5	50	3.0	53.8		*9.5	59	25.0	42.6		9.0		29.0	18.3	K	9.5		7.0	26.2		8.8		47.5	36.0	L
9.5		23.5	59.8		9.0		27.9	26.1		8.2		42.0	11.3	K	8.8		21.1	0.4	K	9.0	26	0.9	30.8	
8.9		29.6	30.2		9.4		34.6	15.3	a	8.6		58.1	5.8	K	8.7		27.3	9.1	K	9.5		9.4	55.7	
		+	−				+	−				+	−				+	−				+	−	
10pr.		32.91	0.68		10pr.		32.89	0.79		10pr.		32.87	0.91		10pr.		32.85	1.02		10pr.		32.82	1.16	

1517 α			
var	59	5	5.4

1701—1760

	7ᵃ	+9°	
m	′ ″	′	
9.5	26 22.0	0.0	
9.3	25.9	7.6	*a*
9.3	27.6	8.8	*aB*
9.3	27 1.3	14.7	
9.3	3.9	14.5	
9.2	9.2	51.4	*b*
9.5	17.3	37.2	*aB*
9.5	35.5	59.8	
9.5	50.8	54.8	*aB*
9.5	56.7	9.7	
9.4	56.9	42.0	*aB*
9.2	28 3.5	49.0	K
9.5	14.4	12.4	
9.5	24.6	2.4	
8.5	46.9	36.0	K
9.4	56.8	28.1	*aB*
8.8	29 14.5	58.9	
9.5	19.2	52.5	
9.5	26.3	4.4	
9.4	33.5	0.2	
9.5	34.6	11.0	
9.5	39.0	55.7	
8.8	47.6	56.7	K
8.9	30 16.3	49.7	K
9.5	17.4	39.0	*aB*
9.5	20.0	32.3	
9.0	26.6	40.6	K
9.5	37.1	37.5	
9.5	50.3	1.4	
9.5	53.8	1.9	B
9.5	55.9	35.8	
9.1	31 5.0	55.5	
7.5	12.5	15.1	K
9.2	30.3	55.2	
9.5	34.4	44.4	
8.4	32 6.5	25.4	K
9.5	43.2	22.7	*aB*
9.5	48.0	53.2	
8.4	56.2	27.9	K
9.2	59.4	40.0	
9.2	33 21.3	4.2	*b*
8.5	39.3	32.0	K
9.3	42.1	21.3	*aB*
9.5	34 1.1	39.4	
9.2	15.0	58.0	
9.5	26.8	35.6	
9.5	29.1	12.5	
9.5	49.0	21.4	
9.4	50.0	7.0	
9.5	58.4	33.3	
9.5	58.7	11.9	
9.4	35 10.6	7.0	
8.2	55.1	56.7	K
9.0	58.9	14.7	K
9.5	36 2.9	7.3	
9.5	51.4	0.0	
9.1	37 7.3	48.4	*ab*
9.0	9.4	21.8	K
9.0	55.8	35.9	
9.3	38 1.3	33.2	
10pr.	*32.78*	*1.29*	

1761—1820

	7ᵃ	+9°	
m	′ ″	′	
9.5	38 26.0	23.6	
9.5	51.7	39.4	
9.4	39 4.5	15.0	
8.9	23.2	4.0	
7.8	37.5	58.5	K
7.5	38.8	19.4	L
9.5	48.8	10.2	
8.7	40 13.5	11.1	L
8.8	45.8	50.2	K
9.5	47.1	1.8	
9.1	51.6	24.3	*a*
9.5	41 15.0	38.3	
9.3	38.6	33.8	
8.8	38.7	18.6	
8.5	50.4	33.3	
9.0	51.9	29.8	
9.5	42 9.3	23.1	
9.5	10.7	48.4	
8.7	10.9	15.6	K
9.0	12.3	12.5	B
9.5	21.3	53.9	*aB*
8.5	24.4	5.6	K
9.3	35 1	41.4	
9.5	42.6	13.9	
9.1	43 15.2	35.6	*a*
8.8	27.3	2.1	L
9.3	28.7	13.5	
8.7	41.0	49.9	K
8.8	42.3	21.8	
8.4	47.8	35.5	
8.3	48.3	45.5	K
9.4	49.6	22.4	*a*
9.3	44 7.7	10.5	
8.6	7.8	34.7	K
9.5	17.8	51.0	
9.4	23.5	53.0	
9.1	43.2	1.0	*ab*
9.4	45 11.5	15.0	
9.0	12.2	28.5	K
9.5	29.4	45.0	
9.4	38.0	15.1	
9.1	40.3	31.1	K
9.3	42.2	51.9	
9.5	49.4	36.1	
7.9	51.6	22.8	K
9.5	55.2	26.1	
9.2	46 22.0	39.0	
9.5	24.2	40.7	
9.5	25.5	45.6	
9.1	43.7	54.6	*a*
9.3	49.0	48.9	
9.1	58.2	51.4	*a*
8.0	47 16.6	43.7	K
9.5	28.1	42.6	
7.0	38.0	14.4	K
8.5	38.2	6.0	K
9.1	53.9	33.1	*a*
9.3	48 2.9	22.2	
8.9	5.0	48.6	
9.3	31.6	35.5	*aB*
10pr.	*32.73*	*1.46*	

1821—1880

	7ᵃ—8ᵃ	+9°	
m	′ ″	′	
9.5	48 33.7	34.0	
8.4	53.9	25.6	K
9.3	49 22.6	24.2	
6.0	23.9	1.6	L
9.1	31.5	52.0	*Kb*
9.3	47.6	25.7	*a*
9.5	50 2.8	51.0	
9.5	12.9	47.4	
9.5	51 0.9	31.2	
9.5	16.5	16.2	
9.4	22.6	16.6	*aB*
9.5	48.0	30.8	
9.5	52 7.7	39.6	
9.4	7.8	42.6	
8.2	26.6	22.0	*B*
9.4	28.4	23.5	
9.3	53 3.7	39.1	
9.5	13.6	15.1	
9.5	19.7	32.2	*aB*
9.5	38.7	37.1	
9.4	43.1	1.0	
9.3	51.9	32.0	
6.7	58.7	18.2	K
9.3	54 3.1	40.1	
9.2	3.4	7.9	
9.3	11.8	42.5	
9.5	30 3	16.2	
9.0	32.4	58.7	
9.5	42.9	57.8	
8.6	55.5	28.9	K
9.0	58.7	17.9	
9.5	55 7.9	59.8	
9.3	30.4	45.0	
9.3	32.5	36.2	
9.5	36.0	56.4	
9.5	41.9	15.4	
9.5	42.4	48.0	
9.5	56 15.0	12.7	
9.5	16.1	7.5	
7.5	34.8	40.8	*Bb*
8.3	46.1	53.6	
9.5	59.0	23.4	
9.5	57 1.5	42.1	
9.0	29 5	49 6	K
9.5	41.3	56.8	
9.4	43.4	59.1	
9.5	55.8	33.2	
9.4	59.9	11.4	
8.9	58 4.5	44.8	K
9.5	42.4	53.4	
9.5	53.7	35.4	
8.8	59 6.5	12.7	*K*
8.9	6.7	17.8	
9.3	24.3	41.0	
9.2	25.2	38.9	
8.0	49.9	51.2	K
9.0	0 8.3	27.7	
9.3	9.2	21.8	*aB*
9.5	9.5	32.3	B
9.4	27.0	18.2	
10pr.	*32.68*	*1.61*	

1881—1940

	8ᵃ	+9°	
m	′ ″	′	
9.5	0 35.1	53.8	
9.5	40.2	38.4	
9.5	1 4.3	49.5	
9.5	12.0	13.9	
9.1	40.2	22.7	*ab*
9.5	44.9	18.0	
9.5	56.7	44.1	*aB*
9.4	2 9.3	4.0	
9.0	9.9	52.6	
9.3	15.0	2.4	
9.5	18.2	46.4	
7.2	26.0	35.8	K
8.5	3 27.4	56.6	
7.8	28.3	43.3	L
8.5	28.4	9.2	K
8.8	57.5	6.7	
9.5	4 46.3	43.0	
9.5	5 20.2	25.9	
9.5	21.6	21.9	
9.5	27.7	8.3	
9.3	32.7	35.4	
9.5	44.5	0.8	
9.5	46.5	0.5	
9.2	52.9	32.8	K
8.9	55.0	5.3	K
9.5	55.1	9.6	
9.0	56.5	30.4	K
9.0	6 0.1	5.7	
9.5	24.1	25.1	
9.3	27.9	22.2	
9.3	37.0	24.4	
9.0	47.1	41.1	K
9.5	8 19.2	30.4	
9.2	20.8	41.5	
8.5	22.9	51.9	K
8.8	27.6	9.3	
3.7	39.4	37.4	K
9.4	46.5	47.4	
8.8	9 1.7	25.1	
9.5	18.1	58.8	*a*
7.5	40.5	18.7	K
8.5	47.7	36.7	K
9.3	50.5	50.3	
9.5	10 2.2	34.1	
9.2	11.3	2.7	
9.2	19.2	36.8	*aB*
7.9	32.4	36.4	K
9.0	37.9	36.9	B
9.3	11 2.0	41.3	
9.5	11.8	49.5	
9.1	12 14.6	45.4	*aB*
9.0	19.9	38.3	
9.5	27.7	4.8	
7.9	37.1	51.5	K
9.5	51.8	30.1	
9.5	13 4.5	11.9	*aB*
9.4	16.4	4.0	*aB*
9.3	16.5	30.8	
9.4	26.4	6.5	
9.5	28.4	35.3	
10pr.	*32.62*	*1.75*	

1941—2000

	8ᵃ	+9°	
m	′ ″	′	
9.5	13 51.0	59.8	
9.5	14 10.7	29.7	
9.0	16.1	2.5	
8.8	37.1	34.9	
9.5	40.0	27.9	
9.5	40.6	57.9	*aB*
9.5	45.6	50.9	*aB*
9.4	49.8	55.9	
8.1	53.4	55.4	K
9.1	15 24.2	8.2	K
9.3	59.5	10.3	
8.5	16 23.1	41.6	K
9.5	23.4	13.4	
9.5	24.9	9.3	
8.6	33.0	2.5	
9.5	40.6	13.8	
9.4	49.9	9.7	
9.5	50.1	25.2	
9.1	53.7	44.8	K
7.6	17 9.3	53.4	*Kb*
9.5	19.7	36.5	
9.0	29.7	23.4	
9.5	31.0	56.6	
9.3	37.5	58.5	
8.8	18 9.5	36.5	
9.5	31.9	30.6	
9.5	38.1	29.1	
9.0	19 8.5	56.3	K
9.5	20.4	19.7	*aB*
9.5	27.6	45.0	
9.4	30.9	32.7	*aB*
9.3	35.4	50.2	*aK*
9.5	40.5	31.6	*a*
9.6	57.8	2.3	
9.5	58.5	5.1	
9.4	20 0.0	42.6	
9.4	11.3	38.7	
9.4	12.8	20 3	
9.5	16.5	29.5	
9.5	38.5	32.6	
9.2	38.8	50.9	
8.8	43.9	58.1	
9.1	21 35.7	7.4	*a*
9.4	37.2	14.0	
8.7	41.1	55.3	K
9.2	42.4	23.9	*b*
9.5	52.0	13.8	
9.4	22 27.1	28.6	
9.4	38.9	6.6	
9.5	40.0	19.6	
9.5	52.3	13.8	
9.5	23 14.5	59.2	*aB*
8.3	18.4	41.2	*Kb*
9.2	33.5	46.7	
9.5	47.6	24.7	
9.5	24 11.2	18.7	*aB*
8.5	26.2	22.4	
9.5	40.5	22.8	*B*
9.5	46.6	27.8	
9.3	51.0	27.8	
10pr.	*32.56*	*1.91*	

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	8ᵐ		+9°			8ᵐ		+9°			8ᵐ–9ᵐ		+9°			9ᵐ		+9°			9ᵐ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	25	43.6	12.3		8.8	41	28.5	23.2	K	9.5	59	43.7	37.2		8.2	18	13.1	25.2	Kb	9.3	40	15.5	50.2	
9.3		45.7	54.3	a	9.3		40.5	8.8		9.5	0	18.3	12.4		9.5		34.1	44.5		9.1	41	8.3	39.5	ab
8.8	26	44.9	24.5		7.8		40.8	24.0	K	9.5		20.5	7.6	aB	9.2	19	1.2	47.7		9.5	42	1.2	13.7	
8.9		44.9	52.9		9.2		46.0	33.2		8.8		24.7	27.9	K	9.0		23.5	46.7		9.5		3.9	24.9	aB
9.0		45.4	45.4		9.4		47.3	50.5		9.1		58.0	6.8	ab	9.4		37.9	10.9		9.5		32.8	5.0	
9.5	27	2.6	22.4		9.3		53.2	39.4		9.3	1	26.9	53.2		9.5		51.7	35.6		9.3		48.3	31.6	
9.3		9.5	0.6		8.7	42	31.0	48.5		9.5		30.5	13.8		9.0	20	13.2	33.5		9.5		53.3	26 6	aB
9.2		42.1	4.7		9.5		47.2	10.1	aB	9.5	2	0.1	11.9	aB	5.3		41.7	40.9	K	9.4	43	13.5	37.9	aB
9.1		47.9	59.5	ab	8.9	43	5.7	4.9		8.9	3	21.8	19.7	Kb	9.1		47.3	55.0	ab	9.5		41.2	8.0	
9.4	28	11.3	40.3		9.0		12.9	57.0	K	9.2		22.3	10.1	aB	9.5	21	29.7	17.0		9.1		44.0	11.2	ab
9.5		54.1	47.8		9.5	44	19.0	5.2		9.5		39.5	8.5		9.5	22	35.1	14.5		9.1		56.0	4.3	a
9.5	29	9.3	2.0		9.5		27.1	37.8	a	9.5		40.0	12.0		9.3		50.8	10.6		9.3	44	9.8	16.4	
9.2		12.9	38.8		8.7		45.0	36.6		6.8		40.8	33.9	K	9.4	23	5.0	22.8		9.3		29.3	51.9	
9.3		30.5	12.7	B	9.4		46.2	15.7	aB	9.4	4	0.2	58.8		9.0		21.3	19.4		9.5	45	19.0	58.7	
9.4		31.6	33.5	aB	9.5		57.8	55.7		9.5		51.4	50.8		8.6	24	8.7	49.2		9.5		19.1	6.1	
9.3		38.9	45.9		8.5	45	11.1	44.6	K	9.5		53.3	21.3		9.3		28.3	29.2		9.2		37.6	9.7	
9.1		57.9	56.2	a	9.5		13.2	19.3		9.1	5	22.1	51.5	ab	9.3		44.6	44.2		9.2		43.7	22.4	aBb
9.4		58.1	22.0	a	9.3		57.4	25.3		9.5	6	7.9	19.7		9.2	25	2.5	13.0	b	9.5	46	16.0	59.2	
8.8	30	1.4	38.8	K	9.4	46	1.9	36.2		9.5		26.3	42.5		9.5		24.2	6.4		9.4		37.6	3.7	B
8.8		39.1	47.1		9.3		2.0	8.1		9.5		40.8	5.1		8.3		32.5	48.7	K	9.3	47	2.0	3.9	
8.7		46.7	54.3	K	9.5		30.8	26.6		9.5		55.9	24.4	aB	9.5		36.8	18.1		9.3		48.1	2.3	
9.4	31	5.3	38.9		9.5		36.7	36.5		9.2	7	5.4	2.4		9.3	26	30.8	47.5		6.2	48	45.2	38.5	Kb
8.8		29.5	24.8	K	9.4		55.8	49.1		9.4		11.3	28.6		9.3		57.7	20.5		9.5	49	2.5	20.8	
9.3		31.1	56.3		9.5		56.1	16.2		9.4		53.0	5.3		9.5	27	10.0	9.1		9.5		5.7	25.7	
9.5	32	4.2	5.5		9.0		59.3	6.7		9.5	8	23.6	24.3		9.2		15.2	5.3		9.2		42.0	45.7	aBb
9.5		16.5	57.7		9.5	47	7.1	59.6		9.5		51.9	47.0		9.5		23.0	54.7		9.0		46.7	16.9	K
9.4		35.6	26.8		9.3		20.1	33.2	b	9.5	9	17.8	27.3	B	9.3		57.5	11.6		9.5		53.0	50.7	aB
9.5	33	9.0	48.0		9.5	48	31.9	9.6		9.4		20.0	25.6	B	9.2	28	20.1	32.1		9.3		59.5	38.3	
9.5		30.4	6.6		9.2	49	6.7	48.3	K	9.4		39.2	20.5	aB	9.1		31.8	35.0	ab	6.8	50	27.1	1.5	K
9.5	34	3.8	14.1		9.2		35.6	59.0		9.4		46.8	58.1		9.0		35.0	27.0	B	9.0		30.1	12.2	
8.9		26.5	34.9	Kb	9.1		48 6	29.8	aBb	8.2		56.0	58.2	K	9.4	29	8.1	23.1		9.5		44.3	33.0	
8.9		28.8	27.8	K	8.3		51.1	50.0	K	8.8	10	4.2	27.3		9.5		23.1	2.3		9.5		44.6	52.2	
9.4	35	2.9	6.3		6.0		53.5	56.3	K	9.4		14.8	44.0	aB	8.7		40.9	29.8	K	9.5	51	40.1	27.0	
9.5		23.5	18.4		9.5		57.0	23.4		9.5		33.3	44.7	aB	9.1		51.7	19.5	K	9.3		40.2	33.0	
8.5		30.3	3.3		9.1	50	3.2	28.9	a	9.2		36.5	53.9	B	9.3	30	22.8	12.5	a	9.0		46.8	7.2	K
8.8		34.4	17.9		9.5		16.3	36.8		9.5	11	10.5	30.8		9.2		37.4	0.4		9.5		55.6	33.0	
9.2		40.1	26.4		9.0		34.4	15.8		9.5		11.7	58.9		9.3		39.0	20.6		9.3	52	2.8	47.9	
7.6		51.5	51.9	K	9.3	51	21.9	51.9		7.8		25.0	41.6	K	9.3		50.4	32.6		9.3		36.4	20.1	
9.4	36	6.0	10.4	aB	7.5		31.3	32.5	K	9.2		33.6	39.6		9.5	31	8.3	30.8		9.3		53.3	5.6	
9.4		11.2	10.1	aB	9.5	52	7.4	5.0		9.5	13	1.0	44.8		8.7		25.2	7.7	K	8.1	53	19.9	39.6	K
9.5	37	24.5	17.7	aB	9.5		20.0	32.5	aB	9.1		29.2	43.0	aBb	9.3		55.0	33.9		9.0	54	39.9	22.9	Kb
9.4		32.9	28.4		9.5		25.5	36.0		9.5		40.1	14.5		9.3	32	13.0	52.4		9.5	55	11.8	51.5	
9.5		37.8	13.0	aB	9.5		30.0	50.6		9.4		41.5	43.6		8.5		28.6	23.4		9.3		12.0	38.6	
9.1		40.7	3.9	a	9.3		38.1	18.8		8.7		53.1	42.8	B	9.4		38.5	16.1		9.3		32.9	6.0	
9.5		45.0	47.8		8.9		58.2	6.4	K	9.5	15	4.6	53.7		9.1		45.4	44.0	a	9.2	56	21.0	49.9	b
9.5		49.0	31.7		9.5	53	6.7	14.0		9.4		15.8	39.1		7.5	33	32.7	39.9	B	9.3		24.3	27.8	a
7.5	38	44.5	0.4	L	8.8		7.8	36.5	K	9.0		24.6	37.8		9.0	34	25.2	21.5		9.5		30.4	6.1	
8.8		47.6	51.0	K	9.4		27.0	24.3		9.5		30.6	59.0		9.3		37.8	39.6		9.1		40.5	30.7	K
9.5		51.3	22.7		9.5		31.8	47.2		8.8		59.2	15.1		8.3	35	18.0	27.7	K	8.8	57	29.6	21.1	K
9.5	39	4.7	33.4		9.5		53.8	19.7		9.4	16	3.4	13.8		9.4		43.5	35.7		9.5		34.5	25.0	
9.3		5.1	31.4		9.2	54	47.5	22.8	b	9.4		21.1	41.9		9.5	36	49.5	59.7		9.5		57.5	43.1	
9.2		17.1	15.8		8.2		50.5	2.9	K	9.5		24.7	59.2		8.5	37	31.2	22.7	K	9.5	58	7.6	11.9	
8.8		21.0	54.6	K	9.1	56	9.3	15.9	ab	9.4		32.6	48.9		8.0		35.1	33.2	K	9.5		15.5	44.5	
9.3		21.6	7.4	aB	9.5		35.7	13.2		9.5		38.3	8.9		9.5		45.6	54.3	aB	9.3		19.1	40.0	
9.3		24.6	50.7		9.5		54.6	7.1	a	8.4		46.6	59.7	K	9.3		59 5	21.8		9.5		25.5	14.6	
8.3		30.3	47.3	K	9.5	57	4.4	12.0		9.0		57.2	26.9		9.2	38	0.6	8.4		9.2		28.0	55.4	b
9.5	40	5.4	18.3	aB	9.5		34.2	24.3		9.3	17	0.4	2.9		9.3		44.9	8.2		9.3		31.0	54.4	
9.1		12.3	29.5	ab	9.4		54.2	0.4	aB	8.8		1.2	5.0		9.2	39	14.6	58.9	b	9.1		53.1	16.0	a
9.5	41	7.2	49.0		9.5	58	0.0	52.4		8.9		6.6	33.4	B	7.0		34.3	15.0	L	9.5		59.0	52.1	
9.1		11.8	38.4	a	9.4		43.8	37.5	b	8.9		13.0	35.9		9.0	40	3.9	42.3		9.5	59	4.0	5.0	
		+	—				+	—				+	—				+	—				+	—	
10pr.		32.46	2.09		10pr.		32.37	2.25		10pr.		32.23	2.46		10pr.		32.09	2.64		10pr.		31.92	2.82	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	9h—10h		+9°			10h		+9°			10h—11h		+9°			11h		+9°			11h—12h		+9°	
m		′	″	′		m		′	″	′	m		″	′		m		′	″	′	m		″	′	
8.8	59	27.8	27.8	K		9.5	21	23.6	2.3		9.5	44	0.4	52.4		9.5	13	35.3	13.8		9.2	37	6.2	41.2	
9.3		30.2	42.3			9.3		23.7	6.1		9.3		20.4	11.5		7.4	14	20.0	57.2	K	8.7		25.0	49.3	
9.5	0	7.0	54.9	B		9.4	22	1.8	40.5		8.3		24.9	50.0	K	9.0		38.2	48.9	K	9.0		36.7	57.5	
9.2		20.0	12.0			9.2	23	35.3	32.0	b	8.8		28.0	38.2	K	9.5	15	55.7	54.1		9.3		45.3	27.3	
9.5		43.2	10.9	B		9.5	24	11.3	46.0		9.5	47	44.3	19.0		9.5		55.8	48.5		5.0		49.2	3.2	Kb
9.5		54.7	11.2	aB		9.5		22.0	15.2		9.5		47.6	16.0		9.5	16	16.9	8.7		9.5	38	36.4	18.1	
9.0	1	12.3	21.7	K		9.5	25	19.7	15.5	aB	9.2	48	13.9	21.1	b	9.5	17	5.5	22.4		9.1		54.3	52.7	S
9.5		16.4	54.0			9.5		25.3	59.2		9.5	49	7.0	33.1		8.9		41.5	42.1	K	9.5	40	8.1	8.9	
9.3	2	9.6	8.6	aB		9.5		36.9	35.0		9.5		13 0	49.2		8.5		58.7	42.8	K	6.0		28.9	2.8	K
9.5		26.5	39.1			8.7	26	6.9	19.9	K	9.5		51.0	39.5		9.0	18	7.3	59.3		9.5		30.1	29.2	
9.0		38.7	55.4	K		9.3		18.9	29.6		9.2	50	14.4	47.5	b	9.5		26.4	58.5		9.0	42	11.8	19.7	K
9.3	3	6.7	15.3			9.5		47.1	52.8		9.5		29.2	33.9		8.6		31.4	26.1	Kb	8.7	44	29.0	37.6	K
9.5		15.1	57.9			9.5		53.5	28 5		9.5		59.0	42.8		9.5		46.5	44.6		8.2		30.5	38.5	K
9.0		35.0	39.7	K		6.2	27	25.5	24.5	K	9.3	51	3.4	54.1	S	7.0		48.2	27.1	K	8.8	45	23.7	19.2	K
9.3		40.4	26.1			9.5	28	54.2	59.4		9.2		6.3	56.3		8.7	19	21.7	49.4		9.5		39.5	1.1	
9.5	4	49.9	51.4			9.5	29	40.2	10.4		9.5	52	36.3	41.7		9.5		50.2	13.8		8.5	46	13.3	22.1	K
8.0	5	49.4	54.2	K		9.5		40.7	48.5		9.5		55.6	18.8		9.0		50.5	0.6	K	9.0		40.4	10.5	K
9.5		54.8	40.8			9.5		49.8	22.8		9.5	53	5.5	23.0		9.5	20	32.8	1.8		8.6		41.9	43.2	B
9.1	6	0.4	7.2	ab		9.5	30	28.1	31.3		8.5	54	42.2	38.9	L	9.5		35.4	48.5		9.3	47	9.6	46.1	
9.5		2.3	24.9			8.6		38.5	57.3	Kb	8.5		46.3	23.1	L	9.5		37.1	7.8		5.5		38.0	15.0	Kb
9.1		49.0	21.1	a		9.5	31	38.9	33.2		7.5		58.9	57.2	K	9.3		45.8	57.5	aB	9.5		52.2	26.7	
9.3		49.6	6.8			8.0	32	7.4	35.5	K	9.3	55	24.6	54.8		8.5		57.4	20.4	Kb	9.0		59.8	56.5	K
9.5	7	9.0	29.7			9.3		31.7	7.7		9.5		49.5	9.4		9.5	21	20.5	4.5		9.3	48	23.5	15.9	
8.5		16.5	56.8	K		9.3		47.5	39.8		9.3	56	9.0	57.0	aB	9.3		25.0	7.4		9.3	49	4.7	11.1	
9.3	9	1.5	29.3	a		9.5	33	5.8	7.8		8.5		11.8	31.4	K	9.5		52.6	50.7		8.0	50	23.1	47.9	K
9.5		24.2	53.0			9.5		19.0	2.5		9.5	58	16.8	56.1		8.5	22	55.2	53.9	K	9.3		24.9	56.4	
9.5		25.3	4.6			9.5		28.9	26.5		9.5		27.0	54.8		9.5	23	11.6	58.7		9.3	51	10.0	14.7	aB
9.3		27.0	38.6			8.2		48.4	19.8	K	9.5		31.9	12.5		9.5		38.0	59.8		9.4		40.0	57.6	
9.5	10	4.5	30.5			9.1	34	17.1	36.9	ab	9.5		41.1	16.7		9.1		58.0	32.6	Rb	9.2		54.9	49.2	
9.3		36.1	57.6			8.5		20.5	9.9	K	9.5	59	27.5	51.6		9.0	24	23.9	17.8		9.2	52	12.0	30.5	L
8.2		40.2	25.3	K		9.5		34.0	24.9		9.1	0	18.1	9.9	b	9.0		47.1	43.3		9.0		13.8	26.2	K
9.3	11	17.6	29.9			8.7		53.2	5.6	Kb	8.4		33.0	49.6	K	8.9		48.3	45.5		9.5	53	21.2	27.8	
9.2		29.4	1.9			9.3		54.5	50.8		9.5		34.7	19.9		9.0	26	11.2	35.2		*9.4	54	21.2	25.9	
9.5		38.5	23.0			9.4	35	13.9	7.4	B	9.1	1	14.4	35.2	aBb	9.0		17.1	20.8	K	*9.5		35.2	49.3	
8.2		46.0	43.8	K		9.3		14.3	27.5		9.5		27.2	7.4		9.5		31.8	4.2		9.4	55	31.4	38.4	
8.1		42.3	56.4	K		9.5		21.9	33.5		9.5		43.9	46.3		9.1	28	36.6	53.9	a	8.8		32.5	30.1	
8.2	12	36.5	22.2	L		9.5	36	21.8	27.1		9.5		46.7	52.3		9.0		50.5	43.5		9.3		55.1	7.9	Bb
8.8		38.5	26.6	L		9.5		38.0	23.3		9.2		54.3	36.0		9.1	29	3.8	22 1	K	9.3	56	25.8	26.1	
9.0		44.0	38.8	K		9.2		48.0	39.4	K	9.5	2	0.2	9.8		8.8		16.9	48.8	K	9.0	57	27.7	58.5	S
9.0	13	47.0	31.1	R		9 5		54.7	59.9		9.5		11.0	13.6		9.5	30	4.9	22.4		9.3		29.0	58.5	B
9.3		50.8	49.2			9.5	37	37.4	49.7		9.4		36.0	53.4	aB	9.5		8.8	57.7		9.2		29.5	31.0	aK
9.3	14	11.0	58.7			9.3		51.0	13.3		9.5	3	7.7	17.7		8.3		15.7	3.6	K	9.5		42.4	13.0	
9.0		25.5	13.8	K		9.5	38	23.0	5.7	R	9.5		33 0	7.5		6.8		42.3	41.3	K	4.2		49.9	32.2	K
7.0		35.9	42.1	K		9.5		37.7	8.7		9.2		47.4	20.4		9.5	31	16.6	57.2		9.5	58	19.6	19.4	
9.1	15	9.6	32.7	a		9.3	39	11.7	53.2		8.9		50.7	2.9	Kb	9.5		29.0	59.3		9.5		29.2	37.9	
9.3		16.5	46.6			9.1		23.3	44.5	a	9.0	4	5.4	6.0	L	8.8		55.9	44.8	Kb	9.4	0	14.0	20.2	b
9.5	16	18.3	31.1			9.5		40.0	27.7		9.5		30.5	52.9		9.5	32	52.7	20.0		9.2		43.6	3.2	B
9.5		23.6	59.4			8.8		48.0	1.8	K	9.2	5	28.6	18.4		9.5		58.6	55.5		9.5		55.0	7.2	
9.5	17	1.9	28.8			9.3	40	20.4	7.7		9.0		29.3	23.0		9.5	33	13.8	6.6	aB	9.5	1	28.1	53.9	
9.5		32.5	20.5			9.4		28.3	6.6		9.5	7	37.3	7.8	aB	8.3		14.7	28.0	K	9.4	2	16.8	30.0	
6.0		37.9	32.5	K		8.4		37.6	36.0	K	9.3		48.5	1.5	aK	9.3		26.1	56.8		9.5		35.5	7.9	
7.8		57.5	29.6	Kb		9.4		42.3	6.7		9.4	8	13.4	7.7		9.3		52.7	54.8	aB	9.5		42.9	25.0	
9.5	18	17.3	16.2			9.0	41	11.5	26.5		9.5		43.6	18.1		9.0		55.6	22.8		9.5		49.8	50.4	
9.5		22.5	20.9			9.5	42	0.5	1.3		9.0	10	36.7	24.7		8.6	34	0.9	48.5		9.5	3	5.0	15.9	
9.5		25.6	23.1			9.5		31.8	36.7		9.3	11	57.1	57.7	aB	9.5		11.6	18.7		9.4		24.0	7 5	
9.1	19	22.7	16.3	ab		9.3	43	5.6	56.7		9.5	12	0.9	27.4		8.8	35	11.9	32.0	K	7.8		38.8	31.9	K
9.5		23.9	31.6			9.0		18.0	57.9		9.2		10.2	58.2	aBb	9.5		13.1	25.3		8.6		53.6	25.9	K
8.3	20	18.5	3.3	K		8.2		43.6	56.0	K	9.5		31.0	10.5		9.0		14.4	6.9	R	9.5	4	15.9	13.8	
9 3		32.8	4.8	a		9.5		45.5	16.5		9.2		32.2	52.5		8.7	37	2.0	5.1	K	9.5		23.2	17.8	
9.5	21	2.0	38.2			9.3		56.5	17.8		9.5	13	12.2	56.1		9.9		3.8	14.1		9.0		44.4	33.0	
10pr.		+ 31.75	— 2.97			10pr.		+ 31.54	— 3.11		10pr.		+ 31.30	— 3.23		10pr.		+ 31.06	— 3.30		10pr.		+ 30.79	— 3.34	

2324a				
9.6	8	57.0	21.0	B

2573a				
var	54	25	52.7	

2601 — 2660

	12ᵉ	+9°	
m	4′ 51.1″	59.1′	
9.4			
9.5	5 20.6	50.0	
9.5	32.2	29.5	
9.5	6 23.1	24.1	
8.0	26.6	47.4	L
8.9	32.5	55.2	L
7.7	7 3.3	36.0	K
9.5	10.9	29.4	
9.1	59.8	48.8	*a*
8.5	8 5.0	3.1	K
8.6	25.3	50.7	K
9.3	9 55.0	56.9	
9.5	10 4.9	47.4	
8.5	11 5.9	29.0	P
9.1	12 12.1	35.6	*a*
9.4	38.0	21.8	K
9.0	13 4.2	59.2	
9.5	15 17.2	19.0	
9.5	21.6	12.4	
9.2	22.5	3.3	K
8.3	16 28.1	8.5	K
9.5	17 6.5	9.0	
9.5	12.2	18.7	
9.4	18 8.8	24.5	
9.5	19 34.7	24.1	
8.7	40.4	46.2	
9.0	20 6.8	56.1	
6.5	20.4	25.0	K
8.7	31.1	42.8	K
9.4	41.2	54.4	
9.5	50.2	49.6	
9.5	21 50.1	50.1	
9.4	22 53.4	49.4	
9.0	23 13.2	19.8	
9.3	27.3	14.3	
9.1	24 1.2	38.4	K
9.0	25 25.7	53.9	K
8.8	26 13.5	42.7	K
8.8	39.1	22.2	K
9.4	40.6	43.0	
9.2	57.8	48.6	*a*B
9.5	27 13.9	48.1	B
8.7	19.2	22.4	K
9.5	38.8	36.3	
9.5	28 25.4	53.3	
9.5	58.9	21.2	
9.5	29 20.6	39.9	
7.0	47.8	36.3	K*b*
9.0	31 21.4	33.0	
9.3	25.0	57.9	
9.5	32 9.3	25.0	
9.3	32.3	58.0	
8.5	54.4	19.5	K*b*
9.0	33 2.6	56.0	
9.5	2.7	34.2	
9.5	9.2	57.7	
9.2	19.6	1.0	*b*
7.7	33.1	38.3	K
9 5	57.4	44.5	
9.1	34 4.0	3.1	*a*
10pr.	+ *30.51*	— *3.33*	

2661 — 2720

	12ᵉ—13ᵉ	+9°	
m	34′ 39.5″	48.1′	
8.5			K
9.0	35 29.4	36.2	K
9.5	36 30.6	30.1	
9.5	33.6	50.9	*a*B
9.2	56.9	1.2	*b*
8.4	38 59.0	36.1	
9.5	39 21.2	58.8	
9.5	32.6	10.3	*a*B
7.9	42.8	50.8	K
9.5	57.5	34.2	*a*B
9.1	59.2	48.6	K*b*
9.5	40 8.9	2.5	
8.3	39.0	19.0	
9.5	41 1.0	14.8	
8.2	1.7	54.0	K
8.6	24.7	59.0	K*b*
9.5	30.6	40.1	
9.3	50.1	45.6	
9.5	59.0	28.8	
9.5	42 1.2	49.2	
9.0	41.6	21.9	
8.8	43 23.6	39.4	
8.2	44 2.3	0.4	K
9.5	4.7	48.2	
9.5	15.5	58.0	
9.2	45 22.4	5.9	
9.5	29.3	51.3	
8.8	54.7	32.7	K
9.5	46 18.1	6.6	
8.9	47 10.1	17.7	K
9.5	33.2	26.3	
9.3	48 18.6	1.1	K
9.5	35.9	0.5	
8.7	49 18.4	57.0	K
9.5	55.0	52 9	
7.4	56.6	4.4	K
9.3	50 24.2	20.5	*a*
9.5	45.0	16.0	
9.3	45.8	21.5	
8.5	51 30.4	0.5	K
9.0	52.9	34.2	
9.2	52 18.2	51.4	K*b*
9.0	24.9	57.5	K
9.5	53 17.7	13.8	
8.6	45.5	22.1	K
9.0	51.3	36.6	
9.5	54 4.5	14.9	
8.8	40.5	52.7	K
9.4	55 51.4	6.7	
8.8	56 0.9	49.3	
9.4	18.2	44.5	
9.5	57 12.5	34.1	
8.1	13.6	26.0	K
9.2	20.1	29.3	K
9.0	58 28.9	50.6	K
9.3	57.7	50.7	*a*
8.8	59 18.3	13.2	
9.1	43.3	4.4	*a*b
9.4	0 21.8	1.6	
8.6	30.8	58.0	K
10pr.	+ *30.22*	— *3.27*	

2721 — 2780

	13ᵉ	+9°	
m	1′ 27.2″	15.4′	
9.5			
9.0	56.3	34.5	L
9.5	2 32.4	16.8	
8.8	3 41.1	34.0	K
9.3	4 12.4	28.5	
9.5	20.1	53.4	
8.7	5 36.4	10.1	
9.0	47.7	38.9	K
9.5	56.9	33.1	
8.5	6 6.6	34.2	K
9.1	42.1	18.5	K
9.5	7 15.2	43.6	
9.4	36.1	8.1	
9.5	50.3	53.8	
9.2	8 18.7	21.3	*b*
8.5	25.2	47.4	K
8.6	46.0	58.7	K
9.3	9 11.4	27.0	
8.8	39.6	48.5	K
9.5	11 38.2	48.9	
8.8	58.6	2.5	K
8.3	12 16.8	24.7	L
7.8	41.3	15.4	L
8.1	13 16.7	1.2	K
8.9	22.9	42.4	K
9.5	14 6.0	49.1	
8.5	8.0	28.4	K
9.0	13.0	0.4	
9.4	15.4	24.7	B
9.5	38.2	24 0	
9.5	56.9	0.2	
8.7	15 15.3	39.4	K
9.5	32.5	1.6	
9.5	17 14.3	40.2	
9.5	18 15.2	7.2	
9.0	19 8.5	40.3	K
9.5	20 14.6	59.0	
9.5	38.7	47.8	
9.5	39.4	52.8	
9.5	40.3	38.5	*a*B
9.1	50.4	35.5	K
8.0	55.9	6.9	K
9.5	21 1.9	17.6	
9.3	8.1	35.5	*a*
9.5	41.5	33.8	
9.5	41.8	2.0	
8.6	22 19.1	8.2	L
9.5	21.2	23.8	
9.5	23 21.1	50.3	
8.5	58.8	55.4	K
9.5	24 14.6	50.6	
9.5	31.4	7.6	
8.0	44.4	44.2	K
9.1	25 5.4	23.4	K
9.5	46.6	8.5	
8.3	26 22.9	19.7	L
8.3	46.3	31.7	L
9.0	27 4.3	37.4	L
8.7	6.1	41.3	L
9.3	7.2	52.7	
10pr.	+ *30.00*	— *3.16*	

2781 — 2840

	13ᵉ	+9°	
m	27′ 45.7″	2.5′	
8.8			
9.1	54.0	57.1	K
9.0	28 4.9	43.0	
9.4	10.3	27.8	
7.3	39.0	2.1	K
9.5	29 27.0	0.2	K
9.5	41.3	55.5	
9.5	30 4.3	30.5	
8.8	5.4	53.4	K
9.5	10.5	38.7	
9.0	21.9	8.9	
9.3	31 55.5	42.9	
9.3	59.9	35.4	
9.5	32 35.5	54.8	
9.5	33 37.1	55.5	
8.7	45.7	49.5	K
9.5	34 24.5	31.2	
6.5	35 4.6	7.4	K
9.5	59.1	16.8	
9.5	36 3.4	53.0	
9.5	12.6	58.7	
8.9	37 40.7	5.9	
8.5	38 3.7	34.0	L
8.2	10.5	47.1	K*b*
9.1	30.0	48.5	*a*
9.5	53.7	25.8	
9.0	39 31.6	50.3	
9.5	40 48.3	49.8	
9.5	41 30.5	15.8	
9.2	56.3	18.7	
9.3	58.2	22.5	
9.2	42 5.2	37.8	K
9.5	29.5	28.5	
6.9	33.8	8.7	K
9.0	46.8	26.7	
8.2	44 19.6	3.7	K
9.4	33.2	52.8	
9.5	45 14.5	54.5	
9.0	52.2	19.5	
8.7	46 15.2	50.5	K
8.6	26.6	14.8	K
9.5	48.3	17.0	
9.2	50.4	19.6	
9.4	47 8.6	36.6	
9.4	46.3	54.0	
9.2	55.7	57.0	K*b*
9.1	48 25.5	8.2	K
8.7	52.1	33.3	
8.7	49 5.9	19.6	K
9.5	51 6.6	12.1	
9.5	42.9	9.3	
8.8	52 19.8	38.7	K
9.5	53 1.8	26.4	
9.5	54.3	45.1	
6.0	54 11.0	35.9	K
9.5	22.4	2.0	
9.4	26.1	23.6	
9.1	47.5	27.4	*a*
8.5	55 11.6	11.6	K
9 5	24.7	1.6	
10pr.	+ *29.75*	— *3.02*	

2841 — 2900

	13ᵉ—14ᵉ	+9°	
m	55′ 53.5″	55.9′	
9.3			
7.9	56 32.4	11.2	K*b*
9.5	57 48.1	16.3	*a*
9.3	58 45.2	22.1	*a*
9.4	51.5	13.5	
9.4	59 8.8	23.7	
9.1	28.0	12.1	*a*b
9.2	31.0	33.9	K
9.5	0 9.9	20.8	
9.5	15.8	53.5	
9.5	16.0	47.0	*a*
9.3	2 3.1	54.9	
8.9	38.2	3.7	
9.5	3 8.6	8.7	*a*
9.5	56.8	7.8	
9.5	4 18.3	5.8	
9.5	43.2	47.0	
8.4	5 6.9	5.7	K
9.3	42.3	56.2	
9.5	6 8.6	17.7	
9.5	12.3	42.5	
8.3	35.3	22.3	K
8.1	41.7	40.2	K
9.5	7 57.9	49.6	
9.3	8 1.6	13.2	
9.5	12.0	43.3	
8.8	47.2	23.7	
8.9	49.5	51.6	
9.5	9 16.8	14.0	
9.1	20.9	8.9	K
9.0	25.3	5.3	K
9.4	39.7	58.7	
9.3	10 10.4	25.8	
9.5	17.9	2.5	
8.7	11 25.1	57.4	K
8.6	12 25 4	29.3	K
9.5	38.3	30.7	
8.0	13 12.7	15.5	K
9.5	14 6.3	39.2	
9.5	34.2	9.3	*a*
9.1	16 8.9	59.0	*a*b
5.0	16.6	6.4	K
9.1	17 3.8	5.3	*a*
9.3	10.6	14.6	*a*
8.9	18 4.7	23.3	
9.2	40.2	39.9	
9.3	49.6	43.3	*a*
8.8	54.2	33.8	K
9.0	19 0.0	51.9	K
7.9	39.3	1.9	K
9.2	53.6	22.8	
9.3	20 38.3	12.1	
9.3	39.2	1.4	
9.3	42.7	56.7	
9.3	58.1	30.0	
9.5	21 8.2	12.5	
9.5	20.5	17.4	
9.2	44.7	23.9	*b*
8.5	46.5	49.6	K
9.5	54.0	55.2	
10pr.	+ *29.52*	— *2.82*	

2901 — 2960

	14ʰ		+9°	
m	′	″	′	
8.7	21	59.1	42.1	K
9.3	22	32.5	16.9	
9.2		57.5	36.5	
8.9	23	3.6	58.2	K
9.3		10.2	53.9	a
9.5		50.7	15.7	
9.4		57.3	10.1	
9.5	24	4.7	9.2	
8.5		15.7	32.0	K
8.2		28.9	15.8	K
9.5		49.0	47.5	
9.5		56.2	4.0	
9.2	25	54.3	31.6	a
8.8	26	25.9	51.4	
9.3		52.6	34.8	a
9.0	27	58.7	43.3	
9.1	28	36.4	44.0	a
9.1	29	7.4	2.9	ab
9.4		44.7	56.0	a
9.5		46.8	1.1	
8.7		53.5	52.4	K
9.5		54.0	1.0	
8.8	30	43.3	41.3	
9.1		52.1	47.2	a
8.7		53.3	33.7	K
9.5	31	33.3	11.5	
9.3		37.6	48.1	a
8.0	33	33.7	36.1	L
8.8		52.3	59.3	K
8.9	35	5.9	40.6	
9.5		18.2	55.8	
9.2		36.2	55.1	
9.2	36	15.0	51.3	a
9.4		19.5	52.3	B
8.9		23.6	41.7	
9.3	37	24.5	33.0	
8.7		33.5	41.7	Kb
8.5		38.2	58.6	
9.5	38	4.1	31.8	
9.3		25.9	21.4	
9.5	39	18.5	55.1	
8.9	40	9.1	6.7	L
9.3		16.1	54.0	
9.5		39.4	33 8	
9.5		54.7	2.3	
9.3	41	15.7	22.7	b
9.1	42	8.4	0.1	a
9.5		47.0	2.6	
9.3	44	25.8	22.0	
8.3		52.8	25.7	Kb
9.5	45	5.4	43.3	
8.7		35.8	48.7	K
8.4		36.2	4.3	K
9.3		36.8	33.0	
8.8	46	31.4	37.6	
8.7		37.9	11.5	L
9.5		52.6	39.5	
9.2	47	49.3	12.7	
8.8	48	44 2	44.5	K
9.5		50.6	22.8	
10pr.		*29.32*	*2.60*	
		+	−	

2961 — 3020

	14ʰ—15ʰ		+9°	
m	′	″	′	
9.5	49	12.9	5.3	
8.3		18.1	29.8	L
9.3		22.2	17.1	
9.5		38.3	9.3	
9.5		40 0	2.1	
8.9		46.4	10.1	K
9.2	50	2.2	34.3	
9.4		19.3	5.4	
9.5		21.1	12.3	
9.4		25.8	8.8	
9.2		41.5	5.3	
9.3		51.8	38.5	
9.5	51	4.4	58.5	
9.3		14 7	8.2	
8.6		38.1	3.4	
9.5		52.4	54.4	
8.7		53.3	36.6	Kb
8 1	52	48.6	2.8	K
9.5		56.1	30.4	
9.5	53	2.4	54.8	
9.5		7.0	49.1	
9.5		18.7	56.1	
7.7		32.6	10.7	K
9.0		32.8	37.2	
8.9		42.8	9.5	K
9.5		50.8	42.7	
9.2	54	5.2	38.0	
9.5		42.3	4.7	
9.3		46.6	15.6	
8.5		59.2	46.0	Kb
9.0	55	19.3	1.8	K
9.3	57	20.0	50.6	
9.0		51.9	7.9	
9 5	58	28.8	30.8	
9.5		53.7	27.9	
9.5	59	16.4	43.4	
9.5		58.1	54.0	
9.5	0	1.6	22.9	
7.7		17.5	32.1	K
7.0		33.8	47.8	K
8.7		49.6	26.7	K
9.5	1	19.6	39.9	
9.0	2	0.3	45.1	Lb
9.4		9.3	10.4	
8.8		24.4	9.0	K
8.2	4	30.9	4.3	K
9.0	5	20.9	9.0	
9.5		26.3	44.3	
9.5		38.4	28.8	aB
9.5		42.7	21.4	aB
9.5	6	1.3	24.9	aB
9.3		11.3	16.8	
9.5	7	15.3	27.7	b
9.5	8	25.6	3.1	
9.5	9	22.1	33.6	
8.5	10	20.5	54.7	K
8.9	11	24.3	17.7	
9.5		28.6	5.5	
9.5		31.6	38.6	a
9.5		58.6	26.7	
10pr.		*29.12*	*2.41*	
		+	−	

3021 — 3080

	15ʰ		+9°	
m	′	″	′	
9.4	12	35.5	52.8	a
9.5		50.4	5.1	
9.5		59.4	4.1	
9.5	13	41.0	6.2	
7.9		41.6	27.0	K
9.3	14	50.0	25.3	
9.1	15	12.5	51.3	ab
9.4		54.6	45.5	
9.3	16	2.6	45.5	
9.3		33.6	14.5	
7.5		58.6	25.6	L
8.2	17	16.3	37.1	K
9.0		26.6	25.3	
9.2		29.0	59.2	
9.3	18	37.5	11.2	
9.5		57.0	16.2	
8.7	19	2.6	2.7	K
9.5		10.0	30.6	
9.1		11.3	42.8	a
8.9		45.3	14.8	
9.5		49.6	51.8	
9.0	20	8.6	36.7	
9.5		31.6	34.0	
9.5	21	12.9	9.3	
9.5		33.4	5.0	
9.5		37.0	26.3	
9.5		52.3	13.4	
9.4	22	16.6	50.0	
9.0		39.0	44.4	
9.5	23	10.9	18.6	
9.3		16.3	2.3	
9.4		17.0	40.2	
9.5		34.2	55.1	
9.5		51.0	24.6	
6.7		53.8	4.8	K
9.3	24	6.0	37.1	
9.4		14.7	4.8	
9.1		18.4	6.7	K
9.5		53.0	53.1	
9.3	25	15.3	30.1	
8.8		26.0	2.9	K
8.7		26.2	5.1	K
9.3		35.5	49.2	
9.3		59.0	14.1	
9.5	26	42.3	34.7	
8.2		42.5	51.1	K
9.5	27	7.0	16.8	
9.4		9.0	11.4	
9.2		25.1	56.0	aB
9.5		58.7	52.9	
8.5	28	21.3	37.6	K
9.3	29	36.0	44.1	Sb
9.3		37.5	40.6	
9.4	30	2.1	20.9	aB
8.6		20.5	12.9	K
9.5		55.2	12.9	
9.5	31	23.0	48.2	
9.5		30.3	25.5	
9.1	32	2.4	23.7	L
8.5		35.2	28.4	K
10pr.		*28.99*	*2.11*	
		+	−	

3081 — 3140

	15ʰ		+9°	
m	′	″	′	
8.3	32	42.3	36.2	K
9.5	33	18.2	43.5	
8.1	34	6.5	46.5	K
9.2		16.3	1.7	
9.5	35	0.9	6.2	
9.5		21.7	45.0	
9.3		30.0	1.5	
9.0		40.7	28.6	Lb
8.8		43.9	59.2	K
9.4	36	13.5	18.9	
9.3		23.5	40.9	
9.3		31.2	40.7	
8.6		35.4	4.6	K
9.5		44.3	31.2	
8.4	37	32.0	19.1	K
9.5		35.9	57.0	
8.2	38	28.0	6.7	K
9.2	39	9.4	56.2	b
9.2	40	3.5	55.8	
9.5		48.0	22.4	b
9.5	42	1.7	30.6	
9.4		58.7	33.2	
9.5	43	2.3	7.1	
9.5		20.3	48.8	
9.5	44	7.1	59.1	
8.9		31.4	41.2	L
9.5		33.8	3.1	
8.8	45	17.6	8.1	K
9.4		24.0	45.3	
9.5		39.7	0.0	
9.5	46	24.0	13.4	R
9.5		32.7	59.4	
9.3		55.8	51.7	
9.5		59.3	8.8	
8.5	47	31.0	45.3	K
7.0		40.5	1.1	K
8.3		46.6	41.6	K
8.9		49.3	1.2	K
9.4		59.3	5.7	
7.9	48	24.4	39.9	K
9.3	49	9.9	55.0	aB
8.9	50	20.8	23.2	
8.6	51	33.8	19.3	K
9.2	52	7.1	55.5	b
9.0		21.7	20.4	L
9.5		25.0	28.5	
9.3		28.2	18.8	aB
8.9	53	5.7	2.5	L
9.5		15.1	48.1	
9.3	54	1.4	53.5	
8.7		23.5	41.1	
8.7		27.3	15.6	K
8.6		38.3	20.8	K
9.5		47.8	10.5	
9.5		49.3	4.7	
9.1		55.0	41.6	a
9.3	55	24.7	1.4	K
8.6		39.8	15.6	K
9.3		51.7	58.8	aB
9.5	56	48.0	27.1	
10pr.		*28.82*	*1.84*	
		+	−	

3141 — 3200

	15ʰ—16ʰ		+9°	
m	′	″	′	
9.0	57	16.6	31.2	b
9.4	58	2.4	41.2	
9.5		3.7	4.7	
9.2		22.9	10.4	
9.4		48.4	14.4	
9.4	59	20.7	24.3	
9.0		25.8	41.4	
9.5		59.0	25.3	
9.3	0	13.5	54.6	
9.3		51.2	29.6	aB
9.1		58.0	34.8	ab
9.5	1	29.6	55.2	
7.5		37.9	0.8	K
9.4		59.5	5.6	
9.5	2	27.5	28.6	
9.3	3	47.4	27.1	
9.4		50.0	32.6	
9.5		50.9	40.7	
9.3	4	21.7	46.6	
9.3		29.1	2.7	a
9.5		44.3	52.4	
8.9		48.7	4.6	
9.5		55.6	3.5	
8.5	5	16.6	32.0	K
9.4	6	41.2	44.9	
9.4		49.0	48.1	
9.5		57.6	34.7	
9.3	7	0.6	21.5	aB
8.6		10.9	54.6	Kb
9.3		55.2	17.3	
9.5	8	20.8	42.2	
9.5		44.3	57.7	
8.6		46.5	14.9	K
9.3		51.8	31.7	
8.7		54.4	53.0	L
8.7	9	4.6	16.8	K
9.5		17.4	0.3	
9.0		21.0	27.1	K
9.4	10	41.1	18.4	
9.3	11	26.1	21.9	
9.5		36.9	6.2	aB
9.1		43.4	40.8	a
9.3	12	19.8	5.8	
8.8		20.5	39.2	
8.8		23.3	12.3	L
9.5		55.2	0.8	
9.5		58.9	26.6	
9.5	13	26.2	19.5	
9.0		48.0	10.7	
9.0	14	22.2	56.7	
9.0		27.3	42.5	K
9.5	15	0.2	42.5	
8.4		19.1	16.8	K
8.5		27.8	20.2	K
9.0		39.5	36.7	
9.4	16	5.5	24.2	
9.5		19.6	52.4	
9.5		35.0	39.8	
9.5	17	43.7	2.4	
9.5		52.7	57.9	
10pr.		*28.74*	*1.56*	
		+	−	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	16ᵐ		+9°			16ᵐ		+9°			16ᵐ—17ᵐ		+9°			17ᵐ		+9°			17ᵐ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	18	19.1	58.0		9.4	37	20.0	33.4	aB	9.0	59	2.5	0.6		7.5	16	26.7	36.7	K	9.3	31	58.3	31.5	
9.2		19.8	24.8		8.5		31.7	14.0	K	6.8		16.4	56.6	B	9.5		45.8	59.1		9.4	32	10.9	59.7	aB
6.8		45.0	43.2	K	9.2		43.5	13.1	K	9.5		31.2	39.8	aB	8.5	17	24.5	34.5	K	9.5		28.2	13.6	
8.8		45.2	2.6	K	8.2		49.7	47.0	B	9.3	•	9.7	19.4		8.7		29.1	54.6		9.5	33	10.0	20.4	
9.5		55.5	39.6		9.4		52.0	30.6		8.0		14.0	12.6	K	9.2		34.3	8.9		9.5		12.0	4.0	
9.3		56.0	56.3		9.3	38	5.4	33.1	aB	9.2		50.9	19.8		8.5		51.7	40.4	K	9.4		20.9	45.5	b
9.5	19	17.4	24.8		9.5		30.8	53.9		9.5		52.3	9.0		8.7	18	14.9	10.0	K	9.5		47.5	49.0	
7.0		46.9	36.9	K	9.2		50.7	30.8		9.0	1	31.2	30.7	K	7.4		24.6	2.7	K	9.5	34	31.6	9.6	aB
9.0		48.5	25.5		9.2	39	55.5	2.1		8.7		50.4	22.0	K	9.0		28.4	39.8	K	9.5		38.2	49.9	
8.8	20	29.9	46.3		9.2	40	26.7	31.5	K	9.0	2	43.0	38.4		9.1		32.8	54.0	a	9.5		53.4	39.0	
9.5		55.0	59.3		9.5		26.7	32.9		9.3	3	17.1	55.4		8.7		34.7	34.8	K	8.2	35	29.9	31.2	K
9.0	21	17.6	38.0		9.5		35.3	8.1		9.0		18.5	48.4	b	9.3	19	5.7	13.7	aB	9.4		37.8	4.7	
9.2		34.0	14.1	b	8.2	41	6.0	5.8	K	9.3	4	25.3	42.5		9.5		37.8	52.5		9.3	36	39.6	25.0	
8.8	22	38.8	21.7		9.5		8.3	10.8		9.3		52.8	41.2		9.0	20	3.3	28.3	K	9.5		42.9	47.4	
9.5	23	42.6	30.6		9.5		33.0	29.0		9.3		53.1	20.6	aB	9.5		7.0	34.2		9.5	37	7.8	13.6	
9.5	24	7.9	49.6		9.2		35.3	0.2	K	9.3	5	4.2	28.8	aB	9.5		14.8	14.7		8.7		8.5	27.7	
8.8		16.5	8.1	K	9.2	42	11.8	18.5	Kb	9.5		5.6	58.1	aB	9.3		54.4	32.1		9.3		34.1	0.6	
6.8	25	1.9	43.8	K	9.5		21.3	26.2		9.4		7.8	35.2		8.3	21	0.5	53.1	L	9.3		43.2	43.0	
8.9		52.4	0.2	K	9.5		21.5	14.5		8.5		21.1	56.4	K	8.5		41.1	51.4	L	9.0		48.5	19.2	
9.1		58.2	6.7	K	9.5		27.7	24.0		9.1		23.3	33.5	a	9.5	22	6.5	51.8		8.6		48.5	34.8	L
9.4	26	11.0	28.3	aB	9.5		35.2	1.6	B	9.5		33.9	25.0		9.5		15.4	50.0		9.3	38	25.1	22.0	
8.7		29.5	49.1		7.0	43	2.5	40.5	K	9.1		44.9	0.2	K	9.5		19.6	20.6		9.2		48.4	43.9	a
9.2		39.6	25.0		9.2		8.0	57.3		9.5	6	2.5	19.4		9.4		33.4	37.1	aB	8.9		56.2	45.4	K
9.2		41.5	36.7		9.2		47.7	21.3		9.2		6.8	2.0	K	9.3		44.5	39.4	aB	9.1	39	19.7	19.8	aBb
8.7		42.1	7.9	K	9.2		53.2	14.6	b	9.4		16.3	52.6		9.5		47.6	17.1	aB	9.5		27.6	14.0	
9.2		44.5	32.8		9.5	44	4.5	7.6		9.3		27.2	53.7		9.5		50.1	9.8	aB	9.5		45.0	21.3	
9.5	27	12.1	45.2		7.0		12.7	40.4	L	8.9		31.9	16.5	Kb	9.5	23	8.0	11.5		9.4	40	42.3	59.9	aB
9.5		27.2	40.3		9.4		23.6	14.2	aB	9.4	7	6.7	21.7		9.5		28.1	53.4		9.5		55.2	20.0	
9.0		47.8	5.2	K	9.5		40.8	39.5		9.5		31.6	33.0		9.5		34.3	21.3		9.4	41	0.8	7.5	
8.8	28	25.4	7.9	K	9.5	45	40.7	30.0		9.0	8	2.5	1.5	B	9.5		46.0	57.0		9.5		2.4	40.5	
9.5		30.5	46.6		9.5		41.8	1.6		9.3		12.3	7.0		9.4	25	15.0	47.5		7.0		8.6	50.5	K
9.3		37.7	48.7		9.5	46	31.0	13.2		9.4		31.8	46.0		9.0		54.2	13.0		9.5		26.1	26.6	
9.5		41.6	6.7		9.5		39.4	29.9	aB	8.5		43.7	23.5	B	9.3		55.1	45.6		9.5		49.1	36.1	
9.5		42.3	44.5		9.4	47	20.2	39.1		9.3		54.5	30.8		9.3		59.4	32.0		9.4	42	2.6	17.4	
9.5		57.1	7.2		9.2	48	23.7	33.6	b	9.5	9	36.8	19.0		8.8	26	4.4	19.8		9.3		2.9	10.7	
9.5	29	38.4	3.3		9.2		30.4	49.0		9.5	10	1.6	9.0		9.3		13.5	21.0		9.2		19.8	13.8	b
9.5		52.6	3.7		9.5		45.0	46.8		9.3		4.5	11.0		9.4		45.7	44.5		9.2		20.3	36.1	
8.5		55.1	24.9	L	3.0	50	48.3	36.3	L	9.2		19.9	9.2	b	8.5		52.9	23.5	L	9.5		28.6	24.4	
9.5	30	9.1	10.7		8.0	51	10.4	15.3	L	9.5		34.6	25.4		9.3	27	3.3	1.6		9.5		28.6	27.0	
9.5		10.5	20.4	aB	9.5		54.7	41.8		9.2	11	2.9	18.7		8.8		11.3	45.6	K	9.3		28.7	41.6	
8.2	31	2.7	47.0	K	9.3	52	10.1	54.6	K	8.2		22.1	40.4	K	9.0		23.2	19.0		9.5		40.1	14.4	aB
8.7		9.2	26.1	K	9.5		22.8	46.4		9.3		34.9	52.8		9.3		43.6	28.6		9.5		52.7	39.0	
8.8	32	8.8	26.6	K	8.2		36.3	55.6	K	8.2	12	30.2	23.9	L	8.5		44.4	41.0	K	9.3	43	2.1	13.9	aB
8.2		54.8	7.4	K	8.5		37.4	54.5	K	9.3		41.7	11.2		6.7		44.4	42.0	K	9.5		2.9	25.5	
9.5		55.7	36.4		9.2		38.0	26.3		9.4	13	9.7	55.4		8.2	28	1.9	31.7	K	7.0		17.8	54.3	K
9.4	33	7.0	5.1	aB	9.4		39.7	9.9	aB	7.9		21.0	37.4	K	9.5		42.8	25.0		9.4		26.8	3.1	aB
9.5		12.9	52.2		9.5		48.6	52.8	B	9.5		28.6	42.4		9.5		45.5	30.4		9.2		44.7	31.9	K
9.5		16.5	8.6	aB	9.0	53	16.5	0.6		8.0		34.0	20.9	K	9.0	29	1.7	21.1		7.8		44.7	36.3	K
9.5		18.1	33.9		9.3		59.5	9.0		8.0		45.6	34.3	Kb	7.8		23.4	49.1	K	9.4	44	8.9	6.0	
9.4		33.6	3.5		9.5	54	0.8	16.5		9.5	14	4.5	31.8		9.2		42.9	46.5		9.5		17.7	27.8	
9.1		39.8	55.3	Kb	9.5		1.2	27.7		9.2		52.8	7.7		8.3		45.8	13.6	K	9.1		32.2	12.1	
8.9	34	17.7	22.3	L	9.0		20.5	42.7	K	7.2		58.0	53.3	K	8.9		49.5	14.0	K	9.1		33.9	9.8	a
9.0		19.5	32.1	K	8.9		26.4	15.6		9.3	15	13.6	56.1	Kb	9.2	30	0.9	49.5		9.0		43.7	50.3	K
9.5		33.9	5.8		8.8		50.3	50.8	K	9.5		25.6	5.2		9.3		15.1	55.9		9.2	45	9.6	42.1	
9.0	36	2.3	24.7	K	9.2	55	57.6	6.2		8.6		40.2	53.0	B	9.5		39.0	26.8		8.8		9.8	16.7	K
9.5		15.7	49.1		8.8	56	14.5	36.0		9.3		52.7	52.3	aB	9.5		40.7	3.3		9.4		22.7	0.2	
9.5		33.7	8.2		8.2		30.3	14.5	K	9.4		54.7	56.8		9.4	31	22.2	31.3		9.2		23.9	41.4	
9.5		36.4	4.2		9.5	57	1.1	56.8		7.9	16	3.2	30.8	K	8.1		51.1	13.5	K	9.0		34.6	35.2	
8.1	37	4.0	17.1	K	8.7		8.0	52.6	K	9.3		20.1	8.5		9.3		55.2	17.2	aB	9.2		56.4	4.8	
9.1		11.6	41.9	aB	9.4		50.2	12.3		9.5		23.6	44.5		9.4		57.1	38.1		9.4	46	0.5	34.5	a
		+	—				+	—				+	—				+	—				+	—	
10pr.		28.66	1.30		10pr.		28.60	1.06		10pr.		28.54	0.74		10pr.		28.51	0.51		10pr.		28.49	0.27	

17ʰ—18ʰ +9°

3501—3560

m				
	17ʰ		+9°	
	′	″	′	
9.2	46	2.8	52.2	
9.5		15.5	37.7	aB
9.1		31.4	0.9	K
9.5		40.0	8.7	
8.6	47	0.6	49.0	K
9.5		9.5	55.3	
9.5		40.4	44.9	
9.2	48	6.8	59.9	
9.5		14.4	52.5	
8.8		23.5	17.4	
8.6		31.8	49.8	B
9.5		39.4	18.5	
9.4		52.5	21.6	
9.3		56.9	12.9	
9.5	49	2.5	14.7	
8.0		8.1	46.8	B
9.4		25.6	1.9	aB
9.5		47.5	56.8	
9.2	50	6.4	50.4	
9.5		11.5	55.0	
9.5		20.0	45.9	
9.5		45.9	25.4	
9.4		46.5	39.6	
9.0	51	1.4	30.2	
9.4		13.5	25.0	
9.0		54.7	18.5	
9.5	52	5.9	37.7	
9.3		7.3	59.6	
9.3		34.2	1.8	B
9.5		45.0	11.2	
8.7	53	8.9	42.5	Kb
9.2		17.1	4.8	
9.4		36.8	3.3	
7.0		53.3	34.4	K
9.1	54	4.8	30.0	aB
9.5		22.6	12.5	
8.7		57.4	10.1	Kb
9.5	55	7.0	47.3	
9.3		26.8	7.2	
9.4		40.7	39.4	aB
8.9	56	2.0	44.8	L
9.5		2.0	6.2	
9.3		22.0	49.0	a
9.5		54.9	49.7	
9.2	57	4.0	7.0	
9.5		5.0	30.9	
8.8		5.7	2.1	B
9.5		11.0	27.3	
9.5		32.4	28.5	
9.5		47.7	42.4	
9.4	58	5.4	29.5	
9.2		15.0	22.2	b
9.5		26.2	1.9	
9.0		37.8	48.5	L
9.4		39.6	53.3	a
9.3		48.8	21.8	
9.5		49.9	55.8	B
9.4	59	6.6	29.0	
9.3		23.5	42.0	
9.0		31.9	15.6	
10pr.		+ 28.48	− 0.10	

3561—3620

m				
	17ʰ—18ʰ		+9°	
	′	″	′	
9.0	59	37.4	19.5	
9.5		37.5	59.6	
9.4	0	5.3	24.3	aB
3.3		28.6	32.7	K
7.8		37.8	28.5	K
9.5		53.7	44.7	
7.1		55.7	50.0	B
9.5		58.7	58.5	
9.5	1	7.7	47.0	
9.0		12.3	13.3	K
9.5		13.5	35.3	B
9.5		22.5	5.2	
9.0		29.7	2.8	K
9.5		37.0	31.5	
9.5		39.1	6.7	
9.4		51.5	26.2	
2.3		56.0	12.1	
8.9		56.4	3.0	K
8.9		57.5	58.1	
9.3		58.6	36.8	
9.5	2	9.5	1.1	
9.5		13.4	25.1	
9.5		26.0	34.1	
8.9		27.1	7.6	K
9.5		33.0	31.8	
9.5		53.5	21.2	
9.5		56.0	14.0	
9.5	3	8.8	0.9	
9.0		15.5	15.1	K
9.5		26.4	20.5	
9.0		40.0	33.9	K
9.3		40.2	55.5	
9.5	4	11.5	2.2	
9.0		32.4	21.5	L
9.5		35.7	50.2	
9.5		42.6	58.5	
9.5		43.8	26.7	
9.4		58.3	26.3	
9.4	5	3.5	42.8	
9.5		16.2	30.9	
9.5		21.5	45.3	
9.5		30.4	28.6	
9.0		31.1	23.8	
9.4		33.0	57.1	
8.2		39.1	28.3	K
9.5		52.8	25.5	
8.2	6	5.5	56.6	K
8.7		13.5	15.2	
9.4		13.7	32.0	
9.4		15.2	0.7	
8.2		23.6	3.8	L
9.5		32.9	40.8	
9.5		38.5	31.6	
7.8		46.4	44.0	K
9.5		52.4	8.6	
9.5		55.7	39.0	
9.5	7	5.9	20.5	
9.5		7.0	45.8	
7.7		8.2	24.1	K
9.4		13.3	32.4	a
10pr.		+ 28.48	+ 0.05	

3621—3680

m				
	18ʰ		+9°	
	′	″	′	
9.5	7	16.7	33.6	B
9.5		23.2	58.0	
9.4		38.9	31.1	
9.5		54.3	21.3	
9.4	8	12.3	47.1	
9.3		31.0	58.2	
9.3		38.5	18.2	
9.0		39.7	50.6	K
9.4		47.0	22.3	
9.5		53.3	8.4	
9.5		58.8	54.5	
9.5		59.9	50.0	
9.5	9	8.4	12.2	
8.8		17.0	24.2	L
8.9		28.5	55.4	K
8.8		33.0	11.4	L
9.2		45.8	31.2	
9.5		47.6	32.5	
9.0		48.6	56.5	
8.6		53.3	7.0	L
9.5		53.6	54.4	a
9.3	10	2.9	0.7	
9.5		12.0	5.3	
9.5		17.6	50.5	
9.5		21.4	43.3	
9.5		39.9	19.3	
9.5		42.6	54.4	
9.5		48.0	9.5	
9.5		48.4	34.5	
9.5	11	27.9	3.8	
9.3		44.2	56.6	
9.2		51.4	18.4	b
9.4	12	13.1	2.7	
9.5		15.2	43.3	
9.5		15.6	7.4	
9.5		20.0	25.1	
9.5		21.7	54.2	
9.5		28.3	35.1	
9.5		36.8	19.0	
9.4		38.0	50.8	
9.3		43.1	16.7	
9.2		44.3	10.7	
9.4		48.8	24.9	
9.4	13	29.9	17.9	
8.5		37.5	46.7	K
9.2		46.1	56.3	
9.5		49.3	4.0	
9.5	14	3.8	24.0	
9.5		5.0	10.8	
9.5		9.1	39.7	
9.5		15.6	43.1	
9.5		37.8	7.4	
9.0		52.6	5.7	Kb
9.5		58.4	14.5	
9.5	15	0.4	38.6	
9.2		1.3	13.5	
9.5		23.2	20.6	
9.3		27.8	33.2	
8.7		31.9	15.2	
8.1		33.4	53.2	K
10pr.		+ 28.49	+ 0.17	

3681—3740

m				
	18ʰ		+9°	
	′	″	′	
9.4	15	48.0	33.1	
8.0		52.2	42.1	K
9.5		59.3	41.6	
9.5	16	1.5	27.9	
9.5		7.6	23.6	
9.5		13.7	25.1	
9.2		15.4	40.8	K
9.5		22.9	53.6	aB
9.5		31.7	39.8	
9.4		35.4	26.1	
8.3	17	6.4	48.3	K
9.2		22.8	27.6	aB
9.4		23.2	28.9	
9.5		41.6	5.0	
9.5		43.1	0.1	
9.5		47.0	34.6	
9.2		59.2	46.7	
9.5		59.2	48.2	
8.0	18	5.4	39.0	K
9.5		37.5	5.0	
9.5		38.4	32.0	
9.5		39.7	1.1	aB
9.5		40.1	49.5	
9.3		58.1	5.7	
8.4		58.8	55.9	K
9.1	19	12.8	49.6	K
8.5		14.2	13.2	
9.0		17.7	53.1	B
9.5		20.3	11.1	
8.5		39.4	57.9	K
8.5		40.8	37.1	Lb
9.1		46.7	49.7	a
9.0		52.9	51.1	K
7.6	20	8.7	7.5	B
9.5		8.7	51.0	
9.4		25.8	9.8	
9.4		27.5	52.8	
9.5		30.7	30.1	
9.5		34.0	55.7	
8.6		45.1	45.9	K
8.6	21	19.0	5.6	
9.3		24.4	53.3	
9.5		34.5	58.2	
8.9		35.2	36.2	K
8.9		37.3	33.9	K
8.9		40.6	53.8	
8.3		47.4	7.2	B
9.5		49.4	7.7	
8.2	22	11.4	35.9	K
9.0		11.9	4.8	
9.2		13.8	19.9	
9.5		17.2	54.6	
9.3		25.5	34.7	B
9.0		26.0	35.2	K
9.5		44.4	36.9	
9.5		55.3	19.8	
7.6		59.1	7.0	K
9.2	23	2.0	40.1	
9.2		3.1	4.7	a
8.4		6.5	44.5	L
10pr.		+ 28.49	+ 0.29	

3741—3800

m				
	18ʰ		+9°	
	′	″	′	
9.5	23	15.6	44.4	aB
8.7		17.9	53.4	
9.1		31.4	34.5	a
8.2		31.7	59.5	K
9.3		54.4	7.1	
9.2	24	2.9	18.1	
9.5		7.5	26.6	
8.9		7.7	54.0	K
9.5		19.6	5.5	
9.5		22.6	15.3	
9.3		23.5	25.8	
9.2		26.4	56.7	
9.2		36.7	51.1	
9.0		46.5	45.1	Kb
9.5		51.9	31.5	
9.5	25	3.7	37.8	
9.3		4.8	25.7	
8.6		23.9	54.2	K
8.7		27.1	15.0	K
9.2		28.0	55.0	K
9.3		42.5	5.6	
9.4		56.6	49.0	
9.0	26	0.9	11.1	
9.5		5.0	38.3	
9.1		17.1	7.2	K
9.5		24.0	58.7	
9.5		28.7	10.4	
9.5		41.8	5.0	
9.5		42.4	35.6	
9.5		48.5	45.8	
9.3		55.9	26.9	aB
9.5	27	29.6	56.4	
9.5		41.0	30.6	
9.5	28	0.0	10.0	
9.0		8.7	39.1	K
8.8		16.2	56.5	K
9.5	29	0.0	55.3	
9.5		7.5	26.1	a
9.0		13.0	4.8	
8.8		18.6	11.7	Kb
9.0		23.3	27.2	
9.5		27.6	12.7	
5.3		32.8	0.9	K
9.5		46.6	9.1	
9.2		56.8	15.9	
9.5	30	17.7	36.2	
9.5		19.0	54.1	
9.5		22.4	9.2	aB
8.5		30.8	8.1	K
9.4		50.6	38.8	
9.0		51.7	6.2	K
8.8	31	9.3	47.0	
9.0		10.2	11.7	K
8.4		13.7	40.9	
9.0		15.7	36.6	
9.3		18.5	20.3	
9.5		22.8	15.6	
9.5		29.1	8.7	
9.1		39.7	39.7	K
9.2		57.4	1.2	
10pr.		+ 28.50	+ 0.39	

m	18ᵐ	+9°		m	18ᵐ	+9°		m	18ᵐ	+9°		m	18ᵐ–19ᵐ	+9°		m	19ᵐ	+9°	
	3801—3860				3861—3920				3921—3980				3981—4040				4041—4100		
9.3	32 6.3	23.8		9.5	38 55.1	45.3		9.5	47 55.4	32.3		9.4	58 37.9	53.5		8.3	8 39.6	31.8	K
9.0	10.1	44.5	K	7.3	39 8.4	39.9	Kb	9.5	56.8	42.4		7.8	51.6	33.3	L	9.5	9 7.7	19.5	B
9.5	18.6	58.5		9.5	18.2	51.5		8.4	59.1	3.6	K	9.5	59 11.8	49.0		9.4	11.3	40.3	
9.4	19.5	5.8		9.3	33.9	18.1		9.5	48 2.2	21.7		8.6	21.7	22.0		8.2	11.8	4.6	K
9.5	39.1	53.7	a	9.3	41.7	50.9		9.0	17.0	3.3	B	9.5	43.1	37.4	aB	9.5	48.8	11.8	
9.5	40.2	5.6		7.8	40 2.0	16.1	K	9.4	23.5	29.5	aB	9.5	0 1.5	43.7		9.5	10 4.0	30.1	
9.4	50.7	23.8		9.5	11.3	1.8		8.5	27.4	41.1	L	9.5	7.7	13.2		8.5	7.1	4.9	K
9.5	51.6	40.6		9.3	11.4	25.8		8.5	27.8	9.8	K	9.5	51.7	22.1		9.0	7.6	5.3	K
8.0	33 4.9	50.6	K	9.3	25.8	36.8		9.3	33.0	53.0		9.5	55.0	13.9		9.5	28.5	35.0	
9.5	10.2	33.5		9.2	27.5	51.6	b	9.1	35.4	32.1	a	9.5	1 8.1	19.3		9.5	46.7	29.5	
9.2	14.3	41.5		9.5	32.4	27.1		9.5	49 27.5	35.8		9.5	16.1	48.8		9.0	47.8	59.6	B
9.5	16.2	35.5		9.5	34.3	22.6		8.8	27.8	28.7		7.0	17.8	22.0	K	9.2	49.2	23.5	
9.5	23.5	4.3		8.7	49.6	6.0	K	9.5	45.9	11.6		9.5	21.1	35.0		9.2	52.8	58.7	
8.5	24.2	34.2	L	9.1	41 0.5	11.9	K	9.2	59.9	18.9	K	9.5	39.0	12.0		9.5	11 31.4	39.3	
9.3	27.8	8.6		9.3	6.1	7.0		9.3	50 11.0	30.4		9.5	45.0	33.8		9.5	32.5	24.2	
8.5	28.6	34.3	L	9.2	13.9	1.0		9.5	18.2	0.9		9.5	46.8	37.3		9.3	37.8	21.2	
9.5	43.0	46.1		9.5	42.2	29.4		8.6	20.8	52.0		9.5	47.5	44.6		6.0	58.7	21.8	L
9.5	44.5	18.5		9.5	56.9	16.9		9.2	21.3	47.7		8.3	51.3	8.1	K	9.2	12 4.9	12.9	
9.3	59.4	20.4		9.3	42 28.6	19.5		9.3	30.8	24.7		9.5	2 19.4	12.1		8.3	11.6	47.1	K
8.8	34 1.2	33.5	L	9.5	31.8	42.7	aB	8.2	45.6	40.4	K	9.5	53.4	33.2		9.0	20.2	32.1	
9.3	16.7	2.5		9.5	38.7	24.0		9.0	48.0	30.9	B	9.4	55.5	48.8		8.9	21.0	24.2	
9.5	20.6	0.8		9.3	43 3.5	14.1		9.0	48.7	30.6	B	9.5	3 23.2	56.0		9.3	31.9	39.3	
8.4	27.3	59.2		9.0	7.3	38.2		9.1	51.6	21.1	aB	9.1	31.0	28.0	a	9.3	33.5	18.1	
9.5	27.4	54.5		9.4	19.7	12.8		9.3	52.8	23.7		8.6	40.9	55.4	K	8.9	37.4	52.1	K
9.5	34.6	38.3	aB	8.3	21.0	20.9		9.4	51 0.7	56.4		9.5	50.5	22.1		9.5	42.5	19.6	
9.5	35.1	8.9		9.5	26.7	48.5		9.3	3.9	47.4		9.5	4 1.3	47.9		9.5	45.2	12.8	
9.5	42.0	45.8		9.5	28.8	10.4	aB	9.5	16.9	44.3		9.0	9.8	34.9		9.5	49.0	23.8	
9.2	42.5	44.1		9.0	29.9	40.3		9.4	35.3	42.1		9.5	9.9	57.7		8.6	13 17.0	13.6	
9.5	45.7	8.3		9.5	42.5	31.7		9.3	57.3	43.3		9.5	12.1	24.1		9.5	35.3	5.9	
9.4	51.5	35.8		9.5	43.3	26.8		8.7	52 11.9	52.0	K	9.3	32.9	18.6		7.8	35.5	28.5	K
9.5	59.3	14.5		8.5	46.6	46.4		6.5	26.7	56.8	K	8.2	48.0	43.0	K	9.0	50.8	1.0	K
9.4	35 3.0	57.0		9.5	56.3	56.8		9.4	43.4	5.0		9.0	5 22.8	4.6		9.1	59.6	1.8	K
9.5	3.6	20.2		9.5	44 5.2	31.7		9.5	57.3	50.6		9.5	36.1	12.5		9.1	14 9.8	24.0	a
9.5	10.3	21.8		9.5	13.3	56.8		9.0	53 4.9	12.9		9.3	36.3	23.6		9.2	13.0	46.2	
9.2	13.6	32.9	K	9.0	52.7	42.1		9.3	20.5	13.0		9.0	52.9	16.8	K	8.0	16.5	32.9	B
8.6	25.0	55.5	K	9.3	59.0	55.2		8.3	40.9	10.3	K	9.5	58.8	54.7		9.2	19.0	43.2	
8.3	27.0	3.5		9.5	45 3.8	8.9		9.5	41.9	56.5		9.5	6 2.0	17.9		9.2	20.1	41.3	
9.1	53.3	27.3	K	9.5	6.1	49.3		9.2	50.8	18.3	K	9.0	2.7	2.2	K	9.5	32.0	56.8	
9.5	36 2.4	48.1		9.3	19.1	5.5	aB	9.2	54 3.0	25.3		9.5	7.0	48.5		9.5	15 16.9	57.7	
9.5	9.0	28.9		9.0	22.2	5.6	B	8.0	4.9	14.0	K	9.4	7.8	32.0		9.5	29.4	56.6	
8.1	23.7	1.2		9.5	23.8	28.6		9.2	8.7	46.8		9.1	14.2	18.7	K	6.5	54.8	38.1	K
8.0	24.2	50.8	L	9.0	33.7	3.8	K	9.2	45.0	30.5		9.5	22.9	54.8		9.5	55.2	53.0	
8.8	36.8	13.0		9.2	42.8	4.3	K	9.0	46.0	4.8		9.5	24.6	41.3		9.3	16 12.4	0.6	aB
9.3	38 6	16.6		8.0	50.4	3.7	K	9.3	55 0.4	27.6		8.0	31.3	27.0	K	9.4	13.8	44.2	
9.5	42.0	8.0		9.5	46 1.6	16.5		8.9	8.8	23.1	K	9.5	38.8	13.4		8.3	22.9	13.8	K
8.7	43.4	3.6		8.4	8.4	47.2	L	9.5	11.9	2.4		9.5	40.3	27.0		9.4	36.4	51.5	aB
9.4	45.5	47.8	aB	9.5	16.8	32.9		9.5	31.4	45.2		9.5	7 6.6	16.2		8.5	43.6	1.6	L
9.4	37 3.7	48.1	B	9.4	17.5	55.9		7.2	31.6	26.0	K	9.1	21.2	44.5	aB	9.3	54.5	30.3	
8.7	14.9	16.0	K	9.5	19.0	27.3		9.5	33.4	33.4	aB	9.1	21.5	41.4	a	9.5	17 11.8	40.0	
9.3	20.4	13.1		9.5	32.7	1.4		9.2	56 19.3	43.9		8.5	23.6	50.1		9.5	16.9	47.8	
9.4	24.3	27.1		7.6	37.5	29.0	K	8.4	26.3	42.9	K	9.3	26.3	13.9		9.5	42.7	50.6	
9.5	32.0	2.5		9.4	38.4	0.8		8.8	39.7	39.0	K	9.4	30.7	48.7	a	9.5	43.0	35.7	
9.3	33.7	28.0		9.5	41.0	24.9		7.6	51.0	9.6	K	9.5	42.1	10.6		8.2	47.3	48.5	K
9.5	38.1	34.6		9.5	49.6	43.1		8.9	57 0.3	38.2	K	9.4	47.2	51.1		9.5	18 7.2	8.3	
9.4	43.6	56.6	B	9.5	54.0	16.5		9.5	10.5	55.3		8.5	52.9	4.0	P	9.5	16.7	25.3	aB
9.5	51.1	3.7		9.4	54.0	48.5		8.5	54.0	43.3	K	9.3	59.9	39.4		9.5	28.3	29.1	
9.5	38 5.0	26.1		9.5	47 5.2	57.1		9.4	58 4.2	24.0		8.0	8 7.5	33.4	K	9.4	41.3	57.9	
9.2	35.3	37.4		9.5	33.1	3.4		9.5	12.0	34.4		9.4	17.1	13.4	K	8.8	49.9	10.8	K
9.5	41.9	45.0		7.5	42.3	30.6	K	7.0	13.9	26.0	L	7.0	20.8	57.7		9.1	19 5.7	51.0	ab
9.5	47.3	23.4		9.4	49.7	56.5		9.2	23.3	26.7		9.5	27.5	45.5		9.5	12.1	19.7	
	+	+			+	+			+	+			+	+			+	+	
10pr.	28.50	0.51		10pr.	28.52	0.63		10pr.	28.54	0.75		10pr.	28.57	0.94		10pr.	28.60	1.06	

+9°

4101 — 4160

m	19ʰ	+9°	
	′ ″	′	
9.3	19 13.2	37.1	
9.5	32.1	20.2	
9.2	39.7	37.4	K
9.2	20 12.0	38.8	
8.6	16.1	12.2	L
9.2	23.3	56.7	
9.3	29.0	16.4	
9.4	30.7	5.4	
8.6	35.9	40.7	K
9.5	21 15.3	47.3	*a*
9.5	17.0	5.0	
9.0	19.4	21.3	K
9.5	32.7	25.2	
8.1	33.0	20.2	K
9.0	22 9.6	45.4	K
9.3	23.1	52.3	
8.8	25 5	23.0	K*b*
9.2	39.2	27 9	
9.1	42.9	2.0	*a*
9.5	44.7	34.2	
9.5	46.8	53.6	
9.5	52.4	40.9	
9.0	23 36.1	52.7	
8.5	38.0	19.1	L
9.5	47.0	10.6	
9.5	50.3	31.2	
9.5	55.2	4.9	
9.5	24 19.7	8.3	
9.0	20.9	53.1	
8.7	28.6	3.8	
9.5	46.3	59.5	
9.5	48.8	45.4	
9.2	53.2	8.2	*B*
9.5	56.8	57.5	
9.3	57.3	43.3	
9.5	25 12.1	36.4	
9.3	13.2	34.6	
7.7	16.0	30.7	L
7.0	17.2	2.2	L
9.5	20.7	59.2	
8.0	31.2	17.1	L
9.1	34.3	42.5	*a*
8.3	35.9	11.0	L
9.3	57.7	26.3	
8.2	26 2.9	35.0	K
8.3	11.4	39.9	
9.5	26.1	39.6	
9.5	54.3	47.2	
8.7	55.3	50.2	
9.2	56.1	36.0	*a*B
9.1	59.9	14.6	K
9.2	27 0.1	7.2	
9.5	9.8	24.0	
9.4	21.4	2.7	
9.5	28 3.9	3.0	
9.5	10.3	4.3	
9.5	22.6	37.9	
9.5	28.0	33.5	
9.4	30.3	6.3	
9.5	30.6	9.4	
	+	+	
10pr.	*28.63*	*1.20*	

4161 — 4220

m	19ʰ	+9°	
	′ ″	′	
9.5	28 39.4	43.1	
8.4	40.8	0.8	K
9.5	47.2	20.6	
9.5	29 2.4	57.8	
9.5	10.8	15.1	
9.0	16.9	12.1	K
9.5	17.7	54.5	
9.3	36.9	12.8	K
9.5	42.6	18.1	
9.4	53.9	41.0	
9.5	54.5	50.7	
9.4	59.8	33.0	
9.2	30 0.3	13.6	K
8.5	7.2	13.8	K
9.5	8.4	58.8	
9.3	15.8	8.8	
8.8	39.1	24.5	
9.3	39.9	10.7	
8.9	54.4	18.2	
9.2	31 1.7	50.3	
9.3	10.4	20.3	
9.5	23.5	58.6	
8.7	24.0	39.3	K
8.7	29.6	45.8	K
8.5	36.6	43.1	K
9.2	50.0	11.3	
8.7	58.7	1.5	K
8.7	32 3.3	8.6	K
9.0	6.2	58.2	
8.9	9.5	54.0	
9.3	19.8	5.4	
8.4	21.5	3.3	B
9.5	26.5	11.7	
9.5	28.9	51.2	
9.2	31.7	18.4	
9.5	34.0	50.9	
9.0	34.6	52.1	
9.2	38.9	55.9	*a*B
9.0	44.8	3.4	K
9.5	33 11.9	3.1	
9.5	29.4	6.6	
8.2	32.7	26.6	K
9.4	40.9	53.8	
9.5	42.0	24.9	
var	48.2	35.4	
8.6	34 2.1	5.3	K
9.5	5.8	46.2	
9.1	8.3	22.5	*a*
8.9	11.5	32.7	
9.0	16.0	42.5	K
9.1	23.8	3.0	*a*
8.2	29.1	51.5	K
9.5	51.4	23.1	
9.3	53.2	19.3	
9.2	53.7	30.1	
8.9	35 3.8	16.4	
8.2	13.4	38.6	L
9.4	19.1	48.9	
9.3	23.3	18.8	
9.5	39.7	54.4	*a*B
	+	+	
10pr.	*28.66*	*1.31*	

4221 — 4280

m	19ʰ	+9°	
	′ ″	′	
9.3	35 41.9	47.9	
9.0	44.9	23.8	B
9.5	49.2	9.9	
9.3	57.5	19.5	
9.0	58.9	25.6	
8.4	36 9.2	8.3	K
8.4	19.7	9.3	K
9.3	35.4	23.9	
9.5	36.1	21.8	
9.3	37.2	1.2	*a*
9.5	56.8	20.1	
9.5	37 2.0	15.5	
7.0	5.5	11.1	K
9.5	33.4	4.6	
9.5	38.7	33.7	
9.5	51.1	46.1	*a*B
9.1	53.1	51.2	*ab*
9.5	54.8	12.4	
9.5	59.2	1.6	
9.5	59.9	35.3	
9.5	38 1.6	49.0	
9.5	4.0	38.2	
9.3	16.0	51.6	
9.4	19.2	53.2	*a*B
9.3	28.1	13.9	
9.1	34.2	53.1	*a*B
9.5	41.4	15.4	
9.4	52.2	49.4	*a*B
9.5	39 4.4	30.7	
9.5	31.9	37.3	
9.0	36.1	22.5	
9.5	40 0.5	14.3	
9.3	5.3	53.8	
8.5	21.8	18.6	
8.7	24.5	16.7	B
9.0	28.3	12.4	
9.2	33.5	30.6	*a*
9.4	36.1	8.4	
9.1	37.6	46.5	
9.1	42.8	33.5	*a*
9.5	49.4	1.1	
9.1	58.4	41.1	*a*B
9.5	41 1.7	24.8	
8.1	2.5	41.0	K
9.4	18.9	29.3	*a*
9.4	43.4	52.2	
9.5	47.6	16.6	
9.5	50.9	10.0	
9.0	42 18.3	54.6	
9.2	19.7	32.5	*a*
9.2	21.6	12.3	
9.5	24.1	14.5	
9.4	30.3	31.7	B
9.5	36.0	42.5	
9.3	38.4	49.6	
9.5	39.1	17.1	
9.5	46.9	6.7	
9.4	51.5	25.3	
9.1	43 6.9	38.8	*a*
8.4	14.1	1.4	K
	+	+	
10pr.	*28.69*	*1.40*	

4281 — 4340

m	19ʰ	+9°	
	′ ″	′	
9.5	43 26.0	27.1	*a*B
9.5	32.2	0.1	
9.5	53.6	30.0	
9.4	55.4	47.8	
9.4	59.8	16.2	*a*B
8.8	44 6.9	44.2	
9.3	18.6	57.7	*a*B
7.1	21.3	15.4	K
9.5	22.4	33.1	
9.5	30.8	21.6	
9.3	33.4	41.3	
8.2	49.0	11.4	K
9.5	57.5	52.8	
8.6	45 18.1	52.7	K
7.1	21.0	59.1	K
9.5	23.2	11.4	
9.5	27.9	12.3	
9.5	55.3	11.9	
9.5	58.4	43.3	
9.5	46 4.4	26.2	
9.4	6.7	6.4	*a*B
9.5	15.7	33.9	
9.5	16.6	9.7	*a*B
9.5	32.8	43.3	
9.3	33.1	9.5	*a*B
9.5	39.6	0.3	
9.5	45.0	30.1	
9.5	55.4	59.0	
9.3	47 17.9	46.2	
9.3	31.9	5.7	
9.5	38.3	43.2	
7.5	38.7	23.0	K
9.1	48.5	45.4	*a*
9.5	50.3	53.2	
9.2	48 7.2	43.9	*a*
9.5	17.5	56.6	
9.4	18.5	37.8	
9.3	26.5	35.8	*a*B
9.5	28.0	10.7	
9.2	28.6	44.8	
9.4	36.4	49.1	*a*
9.4	43.2	32.8	
9.5	55.0	35.5	*a*B
9.3	55.5	58.1	
7.0	49 0.2	50.2	L
9.0	4.3	26.4	
9.5	8.6	5.4	
9.0	15.2	1.4	K
8.8	17.3	15.9	K
9.1	33.5	30.2	*a*B
9.5	36.2	37.9	
8.7	38.1	54.0	*B*
9.3	43.8	29.2	
8.9	44.3	31.4	K
9.5	52.4	47.5	
9.2	55.7	22.1	
9.5	50 6.2	50.4	
9.4	8.1	19.7	*a*B
8.9	14.5	54.6	L
8.0	23.0	45.1	L
	+	+	
10pr.	*28.72*	*1.51*	

4341 — 4400

m	19ʰ	+9°	
	′ ″	′	
9.2	50 39.7	52.8	*a*B
9.5	53.2	41.6	
9.0	55.6	28.7	K*b*
9.5	51 1.4	55.8	
9.5	8.0	33.9	
9.5	24.3	34.2	
9.2	32.6	51.4	*a*B
9.5	33.1	19.2	
9.3	44.3	24.1	
9.3	52 2.5	51.5	
8.8	9.8	36.2	
9.5	18.9	1.3	
9.2	19.9	23.0	*a*B
9.0	20.2	6.4	
8.8	21.4	47.3	B
9.2	24.9	47.8	
9.0	26.2	43.1	B
9.5	59.0	43.3	
9.5	59.8	1.2	
9.1	53 16.2	9.5	*a*
9.2	18.3	20.8	
9.5	27.1	59.2	
9.5	35.6	38.8	
9.3	38.9	16.7	*a*B
9.5	38.9	47.8	
9.5	44.4	14.5	*a*
8.5	46.1	4.3	L
9.5	59.1	35.6	
8.7	54 6.0	7.0	L
9.0	9.3	55.3	
9.5	42.4	53.0	
9.4	45.1	6.3	B
9.1	54.8	37.1	*ab*
9.5	55 6.7	45.8	
9.2	44.4	35.4	
9.5	56 38.8	25.4	
8.5	44.5	48.0	B
9.5	50.1	2.4	
9.0	57 24.0	39.9	B
9.5	33.4	14.5	
9.5	34.3	51.6	
9.4	44.8	24.4	
9.5	47.5	34.0	
9.5	51.3	25.5	
9.0	51.8	18.7	
9.5	58 7.1	14.6	
9.3	24.4	25.4	
9.5	27.6	52.2	
9.0	34.8	28.4	
9.1	54.1	57.3	*a*
9.4	59 6.2	0.5	
9.5	14.8	41.8	
9.5	16.1	11.5	
9.4	18.5	39.2	
9.5	30.5	33.2	
9.0	34.7	53.7	
9.0	35.2	3.0	K
9.5	39.4	47.5	
9.5	39.9	18.5	
9.5	45.5	56.5	
	+	+	
10pr.	*28.75*	*1.60*	

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	20ᵘ		+9°			20ᵘ		+9°			20ᵘ		+9°			20ᵘ		+9°			20ᵘ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	0	11.4	54.4		*7.5	8	26.4	43.0	K	9.4	17	38.3	18.2	B	9.5	27	19.7	5.9		9.2	41	0.2	40.9	
9.5		22.0	33.4		*9.5		57.4	42.7		9.2		52.4	16.0		8.0		21.8	46.0	K	*8.8		4.7	51.3	K
9.4		26.8	21.5		9.3	9	27.5	42.6		9.1	18	0.2	47.3	*aR*	8.5		58.8	8.5	K	*9.2		42.1	26.7	*ab*
9.5		36.5	35.0		9.3		46.0	4.8		9.3		6.5	23.0		8.5	28	11.0	47.3	K	9.3		46.8	28.4	*a*
9.3		47.9	57.1		9.5		46.7	52.8	*a*B	9.5		38.8	16.5		9.5		40.2	55.1		9.5	42	8.1	42.6	
9.1		53.2	50.4	*ab*	9.5		46.7	48.5	*a*B	6.5		45.1	36.0	L	9.4		54.0	58.6	*a*	9.2		47.1	3.9	
9.4		57.4	15.2	*a*B	9.1		55.0	0.1	*a*	9.4		51.2	52.4	*a*B	9.4	29	12.4	13.1	*a*B	9.2		59.5	54.1	*a*
9.4	1	10.8	13.1		9.5	10	5.2	35.8		9.5	19	10.3	27.4		8.5		38.0	56.8	K	9.0	43	34.6	52.6	
9.4		11.3	28.4	B	9.5		18.5	5.4		8.5		11.5	0.2	K	9.5		45.8	18.6		9.5	44	23.6	20.1	
9.5		19.0	40.6		9.5		31.7	3.1		9.0		29.8	24.8		9.5		55.5	15.8		9.0		24.6	5.1	K
9.4		24.8	35.5	*a*B	9.3		54.9	4.8		9.0		35.8	26.6		8.3		59.2	58.6	K	9.5		26.3	51.7	*a*B
9.5		29.6	34.9		9.4		55.3	35.2		9.3		52.0	6.7		9.0	30	15.2	3.0		9.3		43.1	7.0	
9.5		31.5	56.1		9.5		58.2	13.0		9.4		55.8	16.6		9.2		35.2	53.8		9.4	45	5.7	9.4	*a*
7.9		36.5	37.7	P	8.8	11	14.2	19.6		9.0	20	7.5	50.4		9.1		44.5	1.3	*a*	8.7		8.1	41.3	K
9.5		51.8	24.1		8.5		16.8	25.2	K	9.5		17.8	35.2		9.5	31	0.2	47.6		9.5		10.1	11.5	
9.5		57.8	45.3		8.7		22.8	12.0	K*b*	9.0		20.5	30.0		8.5		2.2	40.0		9.5		41.2	55.5	*a*
9.1	2	3.5	13.3	*a*	9.5		29.2	51.9		9.5		36.2	44.6		9.5		6.9	49.7		8.9		41.9	2.0	K
9.1		6.5	14.8	*ab*	9.3		38.8	22.7		9.4		37.2	51.1		9.0		10.8	26.2		9.5		46.0	6.7	
9.5		9.2	52.1		9.4		45.2	11.2		9.0		48.5	13.7		9.5		35.2	29.7		9.5		51.9	55.2	
9.5		9.2	33.8		8.2		57.2	45.6	L	9.2		56.2	12.7	*a*	5.5	32	6.2	34.6	K	9.2		54.8	39.9	*a*
9.3		12.5	43.2		8.0	12	1.1	36.0	K	9.0		57.8	27.8	L	9.1		16.4	20.0	*a*	9.2		57.4	57.2	*a*
9.5		20.5	48.4		8.6		41.1	58.2	*B*	9.5	21	1.5	54.0	*a*B	8.8		18.7	33.9	K	9.4	46	5.1	33.6	
9.4		24.3	35.0		9.2		47.3	6.4		9.5		12.1	2.7		8.9		34.6	56.6		9.3		22.9	54.1	
9.5		49.2	41.3		9.4	13	3.8	33.5		9.1		20.8	45.2	*a*	9.4		36.5	1.5		8.7		26.1	41.6	L
9.0	3	2.3	55.5		8.0		5.2	51.4	K	9.5		30.8	39.0		9.4		43.1	38.3		9.4		28.9	36.1	B
9.1		6.9	16.8	*a*	8.8		11.5	42.8	K	8.2		59.6	51.2	L	9.4		47.6	33.5	*a*B	9.0	47	10.1	43.7	L
8.7		18.0	54.3		9.0		12.1	44.3	K*b*	9.1	22	0.7	3.0	K	9.5	33	2.8	2.8		9.4		28.4	4.5	B
9.2		21.0	46.7	*a*B	9.0		19.8	13.0		9.4		22.8	50.6		9.5		6.6	54.8		9.5		40.7	54.7	B
9.5		31.3	46.5		9.5		21.2	41.8		8.5		27.6	25.0	K	9.0		20.5	15.3	K	9.0		45.6	49.9	L
9.0		48.3	44.4		9.3		24.3	57.1		9.1		46.3	49.2	K	8.8		24.1	22.5	K	9.0		59.6	47.1	L
8.9		49.7	55.2		9.1		26.2	22.0	*a*	6.8		57.1	49.3	L	9.2		37.1	9.0		7.4	48	16.8	10.1	*B*
9.4		54.5	34.7		9.0		43.6	19.5		9.5	23	6.5	7.5		9.5		38.2	26.0		9.3		55.1	21.1	
9.4	4	19.4	4.9		9.2		50.2	28.2		7.8		11.5	32.8	K	8.6		45.0	57.1	K	9.2	49	2.8	7.2	
9.0		20.8	53.1		9.5	14	0.5	33.1		9.3		26.8	20.7		9.5	34	14.8	49.5		9.0		37.8	13.1	
9.5		44.5	26.8		9.0		7.7	51.0		9.5		41.8	34.1		9.5		51.1	41.3		9.5		42.5	46.5	
9.0		54.8	12.1		9.5		17.5	34.5		9.4		50.6	41.2		8.3	35	23.6	57.8	K	8.9		43.4	36.3	
8.9		58.6	5.4	K	9.5		36.2	58.0		9.5	24	3.8	56.0		9.5		38.2	58.9	*a*	9.4		58.1	29.8	
9.3	5	3.8	32.7		9.5		49.2	17.0		9.4		11.5	40.8	*a*B	9.5		45.2	44.0		8.8	50	18.1	40.2	
9.5		25.1	2.5		9.5	15	1.3	51.1		9.5		16.8	12.7	*a*B	9.3		48.1	31.2		9.5		30.2	13.8	
9.5		27.4	33.3		9.3		10.5	30.8		9.5		18.5	40.6	*a*B	9.3		56.5	34.4		9.2		54.5	19.1	*a*B
8.3		32.8	30.6	K	9.1		24.2	31.6	*ab*	9.5		23.1	40.6	*a*B	9.3	36	28.4	40.5		9.5	51	1.1	39.2	
8.6		55.4	33.0		9.5		37.5	26.2		9.5		36.8	56.2		9.2		32.3	55.9		9.5		42.8	8.0	
8.8	6	13.5	53.6		9.5		46.5	36.3		9.0		41.5	17.9		9.5		42.5	13.6		9.2		53.9	49.2	
9.5		17.0	35.0		9.5		55.2	12.3		9.5		47.9	6.4		9.5		48.8	54.4		8.2	52	2.9	25.7	B
9.5		29.1	40.4	*a*B	9.5	16	8.5	28.7	*a*B	8.5		52.5	29.3	L*b*	8.7		56.5	18.4	L	9.5		26.3	43.8	
9.0		35.3	17.0	K	8.1		17.0	29.9	L	8.8	25	22.0	55.9		8.7	37	16.7	2.4	K	9.5		29.5	10.4	
9.5		36.3	43.4		9.0		28.1	57.0	K	8.6		30.5	30.0	L	9.1		37.5	30.1	*a*	9.4		39.0	52.0	*a*
9.5		40.4	55.8		7.0		30.7	53.5	K	9.0		31.5	32.7	B	9.0		55.5	19.1	K	9.2		44.0	53.7	*a*B*b*
9.4		43.0	22.0	*a*B	8.9		32.7	37.0		9.4		32.5	51.5		9.5	38	22.6	20.0	*a*	9.4	53	25.6	53.6	*a*B
9.1		47.1	15.0	*a*	9.5		38.4	10.6		8.5		54.2	17.5		8.6		23.6	51.5	K	8.6		31.1	25.9	K
9.4		49.5	59.9		9.2		41.7	39.8	*a*B	9.5	26	6.6	44.2		9.1		26.5	17.0	*a*	9.5		35.5	48.4	
8.4	7	13.9	3.2	K*b*	9.0		48.6	4.4		9.2		6.8	39.7		9.5	39	25.5	36.7		9.4		40.0	57.0	
9.0		23.9	53.7		9.3		50.6	39.6	*a*B	9.5		12.4	57.6		8.8		33.5	19.5		7.7		43.5	25.6	K
9.4		32.2	22.6	*a*B	8.8		52.5	3.0		8.9		17.7	2.3		9.5		44.4	38.8		9.3		54.8	24.9	*a*
9.4		33.4	46.8		9.3		55.9	32.3	*a*B	9.5		30.1	4.3	*a*B	8.5		48.1	9.0	L	8.0	54	1.8	12.0	K
9.0		36.8	25.0		8.9		56.9	58.5		9.5		33.1	48.9		9.0		48.4	28.4		8.7		16.1	32.9	K
9.5		47.1	42.0		9.5	17	0.5	34.5	*a*B	9.3		36.5	15.1		9.5	40	10.5	59.1	B	9.2		33.8	22.4	
9.4		53.1	48.8		9.2		7.4	9.2		8.5		37.5	1.5	B	7.6		29.8	19.8	K	9.5		34.1	6.8	
9.2	8	8.5	4.0	K	8.5		14.8	20.9	K	7.5		56.5	33.9	L	9.5		45.6	5.6		9.5		40.5	41.8	
8.6		25.2	14.6	K	9.1		16.9	56.8	*a*	8.5	27	2.6	45.0	K	7.3		46.4	56.4	K	9.1		42.7	34.8	*a*B
		+	+				+	+				+	+				+	+				+	+	
10pr.		*28.80*	*1.72*		*10pr.*		*28.85*	*1.84*		*10pr.*		*28.91*	*1.95*		*10pr.*		*28.97*	*2.07*		*10pr.*		*29.06*	*2.24*	

4461ª
9.7 | 8 53.3 | 55.8 | B

4642ª
9.6 | 41 5.8 | 46.8 | B

4701 — 4760

m	20ʰ—21ʰ	+9°	
9.5	55′ 6.1	41.8	
9.4	13.8	14.1	
9.5	29.6	1.8	αB
9.3	47.5	11.0	B
9.2	56 11.8	29.0	
9.2	19.2	18.8	a
9.2	23.5	19.9	αB
9.4	35.5	35.9	
9.0	49.8	1.1	
9.5	57 1.5	46.6	
9.5	5.0	8.7	B
9.4	6.4	2.0	αB
8.8	7.8	27.0	K
9.3	33.8	54.8	αB
9.5	37.9	54.0	
9.5	41.5	47.4	
9.4	44.1	28.5	
9.3	58 2.8	15.2	
9.5	6.4	56.7	
9.3	12.5	27.6	
9.4	33.1	11.4	
9.5	57.2	8.2	
9.5	58.5	2.7	
9.5	59 2.1	24.9	b
9.5	19.1	48.1	
9.5	28.5	4.0	
9.0	0 50.0	59.2	K
9.4	1 18.1	33.2	
9.2	23.2	48.5	B
9.3	32.1	4.3	
8.0	39.5	13.4	K
4.0	3 18.5	33.2	Lb
9.0	23.4	20.3	
9.5	24.5	46.2	
6.2	29.1	27.6	K
9.2	51.0	48.0	
9.5	4 24.1	48.4	
9.5	59.5	32.8	
9.3	5 16.0	46.2	
9.5	50.5	35.0	αB
9.5	51.0	53.0	
9.3	51.0	59.4	
9.5	6 5.0	52.4	
9.2	52.8	5.0	B
8.1	7 11.1	1.5	K
4.7	24.6	25.5	Kb
9.0	32.6	35.2	K
9.5	49.6	13.8	
8.8	50.3	52.0	K
9.3	8 13.0	23.2	αB
9.1	16.3	21.0	a
9.2	21.9	18.9	K
8.8	23.2	47.4	K
9.3	25.6	26.3	
9.5	46.9	52.5	
9.5	53.8	25.9	
8.8	9 11.0	3.2	K
9.5	23.5	14.4	
8.7	39.8	36.3	K
9.5	45.5	21.7	
10pr.	+ 29.15	+ 2.38	

4761 — 4820

m	21ʰ	+9°	
9.5	9′ 46.4	35.5	
9.5	51.4	9.1	
9.5	56.9	57.3	
9.3	10 24.5	17.6	
8.1	41.8	56.0	Lb
9.4	49.1	15.8	
9.4	58.0	33.1	
9.3	58.0	42.2	αB
7.0	11 13.1	39.4	L
9.3	16.0	38.4	αB
9.5	25.8	0.8	
9.0	40.8	32.8	
8.8	41.1	22.3	
9.4	50.8	1.5	
9.5	12 5.1	4.0	
9.3	21.1	22.7	
8.9	23.0	59.7	
8.8	35.3	57.8	K
9.3	38.0	43.9	
8.8	42.2	57.1	K
8.8	57.2	55.3	K
8.6	13 22.0	53.9	K
9.4	26.9	41.7	αB
9.5	51.1	17.6	
9.4	14 5.1	21.8	
6.5	18.8	43.5	K
9.2	25.5	23.8	
9.4	31.8	13.8	
8.7	38.5	7.8	K
9.5	15 8.6	48.8	
9.5	16 6.0	16.2	
9.5	7.8	9.6	
8.3	24.0	18.7	K
9.5	29.4	56.4	
8.9	34.5	53.2	
9.1	36.0	20.5	a
8.6	39.1	29.0	L
9.5	17 2.1	7.8	
9.4	5.5	42.1	
6.5	21.1	33.2	K
9.5	24.2	48.5	
9.5	26.0	26.3	
9.2	30.2	40.1	K
8.5	18 17.7	58.3	
8.3	23.0	1.3	K
9.1	41.8	15.2	Kb
9.5	54.5	52.7	
9.4	19 13.4	27.9	
7.3	16.2	31.1	K
9.3	23.1	39.7	K
9.5	23.6	42.8	
9.4	42.1	18.0	
9.1	50.9	29.1	αB
9.0	57.5	16.9	
9.0	20 18.2	11.7	
8.8	20 1	26.1	B
8.6	27.2	56.2	Kb
9.4	32.1	27.6	αB
9.5	45.8	18.3	
9.5	21 0.0	1.0	
10pr.	+ 29.25	+ 2.52	

4821 — 4880

m	21ʰ	+9°	
8.4	21′ 6.2	59.0	K
8.9	13.1	29.7	
8.9	15.3	19.4	
8.9	16.1	49.1	K
9.2	26.8	30.0	a
9.3	27.5	7.9	
9.3	41.5	21.0	K
9.5	54.8	39.4	
8.6	22 22.5	29.0	K
9.5	23 2.5	10.7	
9.5	24.8	53.6	
8.5	33.2	42.8	K
9.5	35.8	9.6	
8.0	50.5	31.4	L
9.4	24 20.1	57.1	
9.0	55.2	30.8	
9.1	25 26.8	19.7	a
8.2	27.1	55.4	K
9.0	57.8	12.4	Kb
8.3	26 0.1	16.2	K
8.8	3.5	45.3	
9.5	50.1	39.0	
9.5	27 17.9	52.5	
8.0	22.4	46.3	K
9.0	43.6	6.1	K
9.5	56.5	13.8	
9.4	59.9	6.8	
9.5	28 52.5	35.9	
9.5	55.4	14.6	
9.3	57.4	17.5	αB
9.3	57.8	24.5	αB
9.5	29 11.5	22.2	B
8.1	12.4	8.0	L
9.3	39.8	38.7	K
9.2	44.5	13.5	
9.4	50.1	36.6	
9.0	30 19.5	14.5	
9.4	23.1	46.4	
9.0	42.5	22.5	
9.3	43.8	35.3	
8.7	44.9	59.9	K
8.0	31 11.8	10.0	L
9.3	15.0	32.5	K
9.5	16.8	46.8	
8.0	18.5	32.2	K
9.0	33.2	35.3	K
7.8	55.2	13.4	K
9.3	32 0.7	39.1	K
9.3	4.5	29.0	
9.2	48.1	55.7	K
8.6	57.5	20.0	K
7.5	33 30.5	59.2	K
9.5	34 41.1	33.6	
8.9	47.1	24.8	
9.1	51.8	34.2	a
9.4	58.8	26.2	
8.5	35 1.8	19.6	
9.3	3.5	36.3	a
9.1	21.5	28.5	
7.9	30.8	33.0	B
10pr.	+ 29.35	+ 2.64	

4881 — 4940

m	21ʰ	+9°	
9.4	35′ 39.2	44.1	
9.1	46.1	46.9	αB
9.1	46.5	51.2	K
9.0	50.5	43.0	
9.3	56.5	59.5	
8.9	36 0.1	50.9	K
9.5	13.5	14.8	
9.1	15.3	47.9	K
9.4	23.5	51.5	
8.0	58.3	14.6	K
2.3	37 5.1	13.2	K
9.4	6.0	56.0	
8.7	9.5	23.5	K
9.0	21.9	14.0	K
9.5	30.8	33.5	
9.5	39 16.8	48.4	
9.0	34.9	38.0	
9.5	59.9	33.9	
8.5	40 52.4	10.7	K
8.7	59.3	59.3	K
9.5	41 24.9	23.2	αB
8.9	56.6	10.9	K
9.2	42 1.4	17.5	K
9.0	7.9	12.2	K
9.5	30.3	33.1	
9.1	41.2	43.6	a
9.5	43.9	54.2	
9.5	52.4	25.9	
9.5	43 19.9	12.4	
9.0	35.4	36.3	
9.5	45.1	59.5	
9.4	44 0.1	48.8	αB
7.4	0.8	41.7	B
9.0	16.4	16.4	
9.5	30.9	44.4	
9.1	54.4	43.3	a
9.5	45 8.4	43.7	a
9.2	17.1	8.6	K
9.5	43.4	27.3	
9.5	46 34.4	13.0	
8.5	47.9	43.3	K
9.3	52.2	39.1	K
9.3	56.9	25.8	
8.8	47 2.9	14.7	K
9.5	24.9	13.6	
9.3	46.9	5.7	
9.3	52.4	25.9	
9.5	48 18.4	32.9	
9.5	18.9	47.8	
8.0	51.8	24.8	K
9.1	49 4.6	35.6	a
9.0	25.4	28.3	K
9.1	37.3	42.6	K
9.3	53.4	0.2	
9.5	52.9	37.7	
9.5	58.5	53.5	
9.4	50 12.2	53.4	
9.0	33.5	9.4	K
7.3	35.5	45.7	K
8.2	37.8	26.9	K
10pr.	+ 29.47	+ 2.77	

4941 — 5000

m	21ʰ—22ʰ	+9°	
9.4	50′ 49.4	53.4	
9.1	57.9	42.2	K
9.5	51 6.4	29.4	
9.5	27.4	29.0	
9.5	32.4	10.2	
9.5	41.4	9.8	
9.3	43.8	58.6	
7.5	52 24.9	53.9	K
9.5	31.4	20.7	
9.5	50.4	6.0	
9.3	51.0	11.9	
8.8	57.4	15.1	K
9.0	53 9.9	37.0	
9.4	18.0	51.2	αB
9.5	42.9	16.5	
9.1	46.0	59.7	a
9.5	54 12.9	33.5	R
9.5	26.4	58.9	
9.5	28.4	20.6	
9.5	38.4	38.4	
9.5	40.4	52.0	
8.9	55 6.6	1.6	
9.5	9.9	46.0	
9.0	12.4	15.5	K
9.4	17.9	54.3	αB
9.4	26.9	54.3	αB
9.1	34.4	45.3	αb
9.5	35.1	53.8	αB
9.2	54.4	30.0	a
9.2	56 2.5	11.5	
9.3	3.1	1.7	
8.9	16.2	7.7	
9.0	27.4	30.0	
9.3	53.9	24.2	
6.8	57 22.9	32.5	K
9.2	32.9	28.0	K
9.5	35.9	34.6	
9.5	55.9	49.2	
9.5	57.3	26.7	
9.3	58 2.0	14.3	
9.5	13.4	50.2	
9.4	16.2	24.0	αB
9.5	38.9	22.5	
7.2	59 2.3	23.4	K
9.4	48.9	14.4	
9.5	0 4.4	23.5	
9.1	44.6	54.8	K
9.5	54.9	22.5	
9.4	54.9	44.4	B
8.8	1 11.6	29.7	
9.0	33.9	47.1	K
9.5	2 16.9	31.5	
9.5	18.9	48.6	
9.5	23.2	7.2	
9.5	57.9	1.3	
9.2	3 33.2	4.7	K
9.3	43.4	54.5	
9.5	4 19.1	49.2	
9.4	55.5	53.8	
8.0	59.9	28.0	Kb
10pr.	+ 29.67	+ 2.86	

5001—5060					5061—5120					5121—5180					5181—5240					5241—5300				
	22ˢ		+9°			22ˢ		+9°			22ˢ—23ˢ		+9°			23ˢ		+9°			23ˢ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	5	2.5	59.3		9.0	25	40.4	39.2	K	9.0	45	1.8	32.3	K	8.7	5	50.6	52.9		9.5	26	47.2	40.8	
9.5		31.5	29.2		9.5		46.2	55.9		5.0		4.8	4.7	K	9.1	6	44.8	22.3	R	9.3		58.3	59.7	
9.5		40.7	28.6		9.5	26	14.6	47.9		7.5		6.8	38.5	K	9.1		48.5	41.5	*ab*	9.0		58.9	51.9	K
9.5	6	39.2	37.4		9.5	27	19.6	31.1		9.3		15.6	52.6		9.1	7	24.0	56.7	K	9.4	27	15.8	0.2	
9.0		40.9	21.8		9.3		21.7	38.8		7.5		18.8	26.7	K	9.5		47.6	49.5		9.5		56.8	20.0	
9.5		54.6	13.1		9.3		37.5	49.6		9.5		52.7	1.3	K	9.4		52.3	0.4		9.5		58.3	26.9	
9.1	7	6.8	50.4	*ab*	9.5		46.3	56.5		9.3	46	51.6	53.3	*a*	9.5	8	2.4	35.0		9.3		58.7	2.3	
9.3		48.6	7.9		7.7	28	26.5	35.6	K	9.5		55.0	38.4		9.4		25.3	36.2		9 5	28	35.2	16.7	
8.2	8	27.2	44.7	K*b*	9.3		53.2	46.5		9.0	47	10.8	33.0		9.3	9	20.7	42.9		9.4		38.9	58.0	
9.0		35.2	20.4		9.2	29	13.7	10.8		9.0		35.3	32.6		9.3		22.0	28.1		9.0		52.7	44.3	K
9.3	9	1.1	46.6		9.5	30	8.3	51.4		9.3		43.6	52.9		8.5		29.5	48.7	K	9.5	30	20.7	41.9	
9.3		50.9	37.4	R	9.0		27.9	2.5		8.6	48	4.6	51.9	K	9.4	10	2.2	59.7		9.3		51.7	33.6	*b*
9.4		51.7	1.1		9.5		50.8	56.7		9.5		10.2	9.3		9.3		6.0	28.3	*R*	9.5	31	3.4	19.9	
9.5	10	15.9	5.1		9 3	31	9.2	6.5		9.4		11.3	45.8	K	9.3		19.6	25.2		8.8	32	24.9	15.8	K
9.5		19.2	43.3		8.1		9.5	51.4	K	9.2		30.3	0.9		9.3		37.7	5.8	*a*	9.5		49.3	17.2	
8.7	11	5.2	44.9	K	9.2		21.6	48.9	K	9.0		42.8	17.0	K	9.0		38.0	45.2	K	9.3		57.8	56.8	
9.0		12.7	10.2	K*b*	9.0		34.6	1.0	K	9.1	49	2.4	55.4	K	9.4		56.5	17.3		9.5		59.8	49.1	
9.5		22.9	57.8		9.3		36.9	21.1		9.5	50	15.8	37.5		9.1	12	0.0	54.3	*ab*	8.1	33	10.0	35.3	K
8.2		27.9	37.4	K	9.0		45.5	11.6	K	8.8		19.3	29.5		9.1		19.3	1.8	K	9.5		17.8	8.1	
8.7		54.6	48.9	K	9.0	32	5.9	48.2	K	7.7	51	12.5	3.3	K*b*	9.2		42.0	37.9		8.8		47.8	13.7	K
9.5		59.6	48.2		9.2		7.5	12.8	K	9.5		28.3	26.0		8.7		43.0	11.4	K	9.5	34	10.3	39.8	
9.5	12	44.7	54.8		9.4	33	14.5	40.6		9.5		37.5	7.3		9.3	13	8.7	13.9	K	9.0		11.8	25.1	
9.3	13	19.3	9.2		9.2		18.5	45.8	*a*	8.9		39.6	1.8	K	9.4		18.0	42.7		8.9		42.8	39.4	R
8.8		24.3	50.3		9.5		33.6	0.0		9.5	52	15.3	43.0		9.5		32.7	17.1		9.2	35	20.6	4.1	K
9.5		50.2	21.1		9.3		41.5	28.1		9.3		45.3	32.3		8.6		36.0	23.9	K*b*	8 0		25.8	5.3	K
9.5	14	13.6	28.0		9.4		43.0	30.7		9.5	53	22.3	37.1		8.3		37.5	33.0	K	8.3		27.8	40.5	K
8.9		48.6	22.5	K	9.5		50.5	20.7		8.5		25.8	30.6	L	9.5		38.7	56.8		9.3		35.3	0.5	
9.3		58.2	48.9		9.3	34	18.6	6.5		9.5		26.1	57.5		9.5		57.2	18.5		5.0	36	1.1	31.4	K*b*
8.3	15	5.0	54.6	L	9.5		31.2	27.6		8.8	54	6.1	59.7	K	9.4	15	13.0	5.8		9.5		12.6	46.2	*B*
8.0		22.9	12.7	K	8.8		32.9	46.2		9.5		48.8	39.2		9.1		14.0	34.0	*ab*	9.5		31.8	40.5	
8.9		28.6	12.4	K	9.3	35	0.1	29.8		9.5		50.0	49.9		9.4		56.5	14.9		9.5	37	10.8	41.0	
9.3		30.9	33.6		9.5		10.6	53.5		9.3	55	23.8	10.0	*b*	9.4	16	20.4	17.5		9.0		17.6	14.6	
8.6		36.1	59.0	K	9.3		36.0	51.3		9.5		47.8	44.4		9.5	17	11.4	20.8		9.4		20.3	17.0	
9.2	16	32.6	14.6	K	9.3		51.7	12.0		8.5	57	35.8	28.8		9.5		30.4	16.7	*b*	9.2		25.6	43.4	K
9.5		32.9	24.6		9.5	36	1.6	53.4		9.1		39.8	2.5	*a*	8.9		31.0	43.8	K	9.5		42.6	59.1	
9.5		38.9	50.6		9.4	37	23.6	29.0	*b*	8.0	58	9.3	39.5	K	8.7		54.2	50.4	K	8.0		52.3	17.3	K
9.5		39.9	1.3		9.5	38	19.0	1.9		9.5		38.0	35.3		9.5	19	51.7	39.7		6.5	38	1.3	22.9	K
9.2		48.5	29.7	*Bb*	9.3		24.1	30.8		var	59	22.2	45.7	*Bh*	9.5	20	0.3	29.3		9.2		13.8	54.4	*b*
9.4		56.5	48.4		9.3		34.8	1.5		9.5		36.8	35.7		9.5	21	1.3	13.1		8.9	40	9.0	33.8	
7.7	17	31.9	4.6	K	9.4		44.5	13.2	B	9.5		49.3	11.5		8.8		23.7	56.7		9.0		39.3	2.7	K
9.5	18	26.7	15.9		9.3		45.2	43.7		9.0	0	41.8	15.5		9.1		28.5	4.6	K	8.7		44.8	21.1	K
9.1		51.6	6.2	R	9.3	39	27.0	44.4		9.4		56.3	30.8		9.3		48.2	16.0	K	9.1		50.3	9.3	K
9.5	19	4.9	1.8		9.2	40	20.3	39.5		9.2	1	2.3	16.0		9.5	22	37.0	9.5		8.7	41	44.8	24.6	K
9.3		24.4	36.7	*aB*	8.3		27.8	34.6	R	8.5		3.1	48.5		8.5		39.0	27.8	R	9.3		55.7	58.1	*b*
9.5	20	11.1	11.0		9.4		33.3	46.1		9.3		45.1	49.8		9.5		39.3	31.0		9.0	43	23.1	49.9	
9.2		12.9	47.1	K	8.7		49.9	48.0		9.5		45.2	28.6		8.3	23	22.4	33.3	K	9.4		46.0	1.6	
9.5		36.2	54.4		9.4	41	29.5	37.8		9.2		45.4	7.7		9.4		24.2	55.0		9.5	44	10.8	14.1	
8.5		39.4	44.3	K	9.0		40.8	38.9	K	9.2	2	18.5	55.6		9.5		32.0	9.8		9.5		17.2	58.4	
9.2	21	4.4	9.0	*b*	8.2		41.6	46.5	K	9.2		39.0	9.3		9.5	24	20.5	31.1		9.5		57.8	7.5	
9.3		38.2	58.6		9.5		42.0	51.8		5.5		42.8	2.8	K	9.5		21.8	24.0		9.5	45	42.8	13.1	
9.3		41.2	40.2		6.8	42	17.3	44.0	L	9.5		48.8	45.8		9.0	25	6.4	1.8	K	9.5	46	41.8	50.3	
9.4	22	0.4	38.0		9.2		40.2	3.3		9.5	3	32.6	18.5		9.5		10.8	13.3		9.5		59.0	3.0	*aB*
8.9		18.5	44.0	K	9.3	43	10.0	46.5		9.3	4	6.6	30.0		9.5		34.4	49.5		9.5	47	11.3	58.5	
8.5		22.6	37.8	K	9.3		13.6	44.7		9.3		12.0	44.5		9.4		39.0	34.1		9.2		33.8	37.1	K
7.8	23	14.5	56.6	K	9.1		33.9	1.8	K	9.0		25.0	44.7		9.5		46.0	37.1		9.5		42.3	11.3	
8.8		21.9	24.2		9.3		48.3	37.1		9.5		38.0	46.8		9.1	26	4.4	13.0	*b*	9.5		45.8	33.6	
9.1		47.8	5.7	*a*	9.4		59.6	1.7	*B*	9.3	5	12.8	0.1		9.0		23.9	50.9		8.6	48	21.1	49.7	K
9.3		52.9	38.1		9.5	44	3.6	39.5	R	9.5		16.8	11.1		9.5		27.3	57.9		9.2		47.3	20.0	R
9.3	24	29.9	47.8		9.5		9.5	57.1		9.4		26.9	59.8		9.5		37.3	52.3		9.1		49.3	49.3	*a*
9.3	25	15.2	9.7	*b*	9.3		58.9	18.5		9.4		43.9	18.2		9.4		43.7	44.3		7.5		56.3	13.4	L
		+	+				+	+				+	+				+	+				+	+	
10pr.		*29.73*	*3.00*		*10pr.*		*29.90*	*3.11*		*10pr.*		*30.09*	*3.21*		*10pr.*		*30.28*	*3.28*		*10pr.*		*30.49*	*3.32*	

5301—5305					5306—5310					5311—5315					5316—5319					5320—5323				
	23ʰ		+9°			23ʰ		+9°			23ʰ		+9°			23ʰ		+9°			23ʰ		+9°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	49	6.8	50.4		9.5	50	35.3	51.7		9.3	53	29.8	0.9	*b*	9.5	57	11.3	9.7		9.2	59	21.3	15.2	
9.5		21.3	58.7		8.7		54.8	1.3	L	9.5		37.0	49.0	K	9.1		37.8	35.1	K	9.0		48.1	54.1	K*b*
9.2	50	15.3	36.0	*b*	9.5		59.8	24.9		9.0	54	56.6	59.0	K	9.0		46.3	37.5	K	9.3		56.9	0.0	
9.5		23.3	28.4		9.5	51	53.1	59.8		9.0	55	0.5	58.5	K	9.0	58	35.8	3.3	K	9.5		57.6	9.5	
9.5		26.6	0.8		9.5	53	12.8	39.9		9.3	56	27.3	38.5											
										10pr.		*30.68*	*3.34*											

Zone +10°

1—40					41—80					81—120					121—160					161—200				
	0ʰ		+10°			0ʰ		+10°			0ʰ		+10°			0ʰ—1ʰ		+10°			1ʰ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	0	4.0	28.0		9.4	17	10.3	5.3		8.9	35	52.3	48.1	B	9.5	56	38.0	4.8		8.3	12	2.0	12.4	K
9.5		20.5	21.0	B	9.5		39.3	6.7		9.5	36	38.1	18.3		8.2	57	33.2	54.8	K	9.1		16.0	19.6	K
8.6	1	5.3	21.4	K*b*	9.2	18	0.9	58.8	R	9.3	37	24.0	34.5		8.0		34.3	32.8	K	9.3		32.1	29.6	K
9.5		8.8	56.4		9.4		37.9	50.3	B	9.3		41.9	29.7	*b*	8.7		37.3	47.7	K	9.4		52.1	35.3	K
9.3		26.8	21.5		9.5		40.9	55.8		9.5	38	12.3	4.7		9.1	58	15.1	58.0	K	9.5		52.5	3.1	a*B*
9.5	2	9.9	57.6	B	8.8	19	3.5	28.2		9.5		25.3	4.7		9.5		29.4	47.7		8.3	13	11.1	42.1	K
8.4		24.3	36.3		9.5		14.3	5.7		9.5		34.2	56.8		9.5	59	25.0	24.4		9.4		13.4	41.9	*B*
5.8		37.8	20.8	K	9.1		17.0	52.3	K	9.5	39	48.3	15.5		7.6		29.0	46.9	K	6.5		41.3	46.6	K
9.3	3	49.8	51.9		9.5		18.8	8.5		7.7		56.5	51.1	K	9.0	0	4.3	33.4	K*b*	9.0	14	3.1	30.6	K
9.5		53.3	6.3		9.3		50.9	55.3		9.3	40	14.2	42.8	K	8.8		47.2	4.8	K	9.2	15	2.3	55.2	K
9.5	4	15.2	14.3	a*B*	9.5	20	18.3	50.1		9.0		14.3	48.3	K	9.1		54.5	7.1	K	7.0		15.3	36.5	K
9.5		18.2	8.3		9.0		44.6	22.3		9.5		41.4	7.5		9.5	1	18.1	48.6		7.3		43.5	6.1	*B*
9.5		42.7	52.9		9.0	21	13.9	31.1	K	9.5		44.1	37.0		9.1		40.1	2.6	K	9.3	16	13.1	35.2	K
9.5		52.8	32.5		8.0		38.2	31.4	K	9.4		51.5	31.0		9.1	2	52.8	10.2		9.5	17	4.0	46.6	
9.5	5	39.3	4.7		9.5	23	59.6	13.4		9.5		53.7	29.7		8.5		59.3	23.4	K	9.5		5.2	0.1	
9.4		44.8	54.2		9.5	24	0.3	2.3		9.5	41	27.3	56.2		9.0	3	7.1	14.0	K	9.0		12.1	29.9	K
9.3		55.7	25.7	*b*	7.5		0.3	44.6	K*b*	9.3		51.6	16.6		9.3	4	0.4	44.5		9.0		22.1	34.8	K
9.5	7	19.6	40.5		9.5		36.4	4.8		9.3	42	28.7	27.9		8.4		12.4	41.7		9.0		45.0	12.7	K
9.5		45.8	56.6		8.8	25	23.9	57.3	K	9.4		40.2	45.3	B	9.0		24.1	23.8	K	9.5		52.9	1.8	
9.5	8	9.6	20.4		8.8	26	21.3	15.5	K	8.9	43	42.3	13.7	K	9.5		25.3	41.4		9.5		55.6	36.8	
8.8		14.9	47.2		8.5	27	10.6	20.5	K	9.4	44	12.3	29.6		9.5		58.4	0.2		9.3	18	41.0	8.1	K
9.3		28.1	56.1		9.2		43.1	15.1	K	9.1	45	9.2	7.2	K	9.5	5	15.9	37.3		9.2		42.4	59.1	*b*
8.8	9	36.3	24.5		8.8	28	37.6	48.4		9.5		32.3	59.8		9.0		30.4	58.7	K	9.5	19	0.3	23.4	
8.8	10	38.7	5.5		9.4	29	45.2	4.2		9.3		51.7	21.7	a*B*	8.3		31.3	55.1	K*b*	8.3		1.4	7.8	K
6.8		51.0	23.8	K*b*	7.3		46.1	37.6	K	8.4	46	16.0	21.0	K	9.5		37.1	14.3		8.3		21.4	37.2	K
8.9	11	22.6	29.1	*K*	9.5	30	42.9	7.7		8.8	47	28.2	5.1	K*b*	9.5		40.2	19.9		9.5	20	15.3	46.9	
9.5		25.9	27.7	*B*	9.5	31	34.0	15.0		9.3	48	0.1	56.1	B	8.6	6	10.7	2.0	K	9.4		32.0	6.8	a*B*
8.3	12	41.8	15.5		9.4		40.0	12.4		9.5		17.7	7.6		8.8		12.3	13.4		9.5	21	10.5	23.2	
8.5		43.1	8.3	K	9.2		57.2	14.1	a*B*	9.5		34.4	43.2		9.0		33.7	45.5	K	9.5		21.6	38.2	
9.5		52.1	53.6		7.3	32	8.1	44.2	K	9.0	49	8.0	55.2		9.4		33.7	27.4	B	9.5		22.8	46.2	
7.5	13	4.3	7.5	K*b*	9.5	33	54.8	18.3		9.5		14.8	0.9		9.3		59.4	21.7		9.0		37.4	3.7	K
7.2		26.7	10.9	K	9.3	34	22.6	22.5		8.8		38.0	38.2	K	9.2	7	45.6	1.1	K*b*	9.3	22	16.1	9.2	K
9.4		36.7	27.8		9.0		34.3	13.1		9.5	52	28.5	38.6		8.8	8	31.6	42.7	K	9.5		18.1	34.1	
9.1		41.4	51.7		8.8		40.4	0.1		9.1	53	32.4	18.5	*b*	9.5		49.6	13.0	a*B*	9.5		30.5	57.8	
9.5	14	10.3	33.8		9.0		42.9	29.7	K	8.2		39.7	23.4	P	9.5	9	11.8	8.2		8.5		40.0	21.3	K
9.3		45.4	26.2	B	9.3		49.2	38.8		9.3	54	44.3	45.2	*a*	9.5		15.0	47.7		9.5		52.3	9 3	
9.0	15	9.1	46.0	K	9.0		51.1	22.8	K	9.0	55	8.0	42.5		9.5	10	33.6	57.3		7.5	24	3.4	9.5	K
9.4		27.2	24.1		8.5	35	5.0	19.0	K*b*	9.5	56	9.0	44.2		9.5		54.6	39.7		9.0		12.3	2.8	K
9.3		35.5	21.0		9.5		23.9	21.9		9.5		9.5	58.1		9.5	11	35.7	26.1		8.8		32.5	57.4	K
9.5		43.6	15.1	B	8.3		43.5	54.9	L	9.5		34.3	15.0		9.5		52.5	56.4		9.5		44.3	35.5	
10pr.		*30.81*	*3.34*		*10pr.*		*31.01*	*3.32*		*10pr.*		*31.19*	*3.28*		*10pr.*		*31.41*	*3.21*		*10pr.*		*31.55*	*3.15*	

201—260					261—320					321—380					381—440					441—500				
	1ª		+10°			1ª—2ª		+10°			2ª		+10°			2ª—3ª		+10°			3ª		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	25	35.7	58.0		9.5	49	41.2	7.7		8.2	16	36.6	50.7		9.5	44	9.5	55.0		9.4	18	45.3	0.0	
8.6		46.0	15.8	K	9.5		53.2	13.8		8.3		51.8	41.6		9.1		14.4	12.1	*aR*	9.5	19	34.7	10.0	
8.2	26	4.4	10.0	K	9.3		54.5	49.7	*b*	9.5	17	20.3	38.3		9.5		25.8	33.5		9.5	20	30.1	29.4	
9.5		10.0	58.0		8.5	50	45.9	5.9	K	8.9	18	22.8	31.1		8.9		43.8	22.3	*R*	7.0		41.3	53.5	K
9.4		23.1	1.1		9.5		56.0	8.6		9.1		38.1	53.9	*b*	8.8	45	2.1	4.6		9.5		48.3	35.6	
8.7		40.9	10.0	K*b*	9.5	51	42.5	2.0		8.5	20	13.8	20.4	K	9.5		44.2	43.4		9.5	21	6.0	24.9	
9.2	27	34.1	9.7	*a*	9.3		55.0	9.0		8.8		25.1	41.2		9.5	46	22.4	6.3		9.4		27.3	51.7	
9.5	28	15.7	10.4	R	9.5		56.6	6.6		9.3	21	9.3	11.8		8.0		30.3	43.1	K	9.5		30.1	23.5	
9.5		46.0	4.5		9.5	52	52.7	51.8		9.5	22	19.9	19.0	B	9.5	47	9.0	30.6		9.5		41.1	4.4	
9.5		56.6	37.7	*b*	9.0	53	26.2	8.2	K	8.4		40.1	25.4	K	8.7		9.6	54.4	L	9.5		52.7	57.2	
9.5	29	22.1	23.2		9.5	54	27.4	37.5		9.5	23	32.9	6.0		9.5		51.6	22.1		9.0	22	10.2	53.3	K
9.5		26.3	17.9		9.5		58.7	58.6	B	9.1		38.3	43.9	*b*	9.5	48	0.7	0.5		5.3		29.1	50.3	K
9.5		51.8	25.1		9.5	55	6.3	47.8		9.0	24	7.3	28.2		9.0	49	5.9	3.6		9.5	23	5.5	42.2	
9.5	30	45.0	2.8		8.5		8.1	40.7	K	8.8		32.4	26.8		9.1		17.5	12.6	*aR*	8.8	24	32.1	14.7	K
9.1		51.2	9.6	*ab*	7.0		13.8	19.7	L	9.2		52.3	27.5	*a*	9.5	50	23.9	23.7		9.5		49.1	57.7	B
9.3	31	21.8	11.0		9.4		30.3	53.6		9.5		57.7	30.8		9.5		56.3	39.0	*b*	9.3	25	7.5	52.0	
9.5		22.5	57.1		9.2		32.2	57.3	K	9.5	25	15.5	3.3		9.2	51	15.1	12.1		9.5	26	0.0	55.5	
9.4		55.9	10.5		9.5		54.4	28.0		9.5		55.3	32.9		9.5		26.7	9.4		9.1		3.9	54.5	
9.5	33	2.1	28.1		9.4	56	19.0	28.4		9.5	26	13.2	14.4		7.6	52	14.2	5.0	K	9.5		21.3	9.2	
9.2		3.5	18.7		9.3		28.7	31.9		6.9		36.9	58.0	K	8.9		44.4	13.2	K*b*	8.2	27	8.6	33.8	K*b*
8.7		14.5	33.0	K	9.5		43.5	7.5		9.5		47.1	7.4		7.0		53.1	17.7	K	8.3		21.8	54.1	K
9.0		31.3	28.2	K	9.3		46.8	28.8		9.5		48.8	14.4		8.5		56.8	16.5	K	9.5	28	6.5	18.6	
9.1		56.2	53.7		9.5		49.8	30.1		9.2	27	0.1	53.8		9.5	54	39.0	46.6		9.5	29	50.1	13.5	
9.1	34	32.5	37.2	R	8.5	57	6.0	41.4		9.4		30.6	28.5		7.8		53.0	26.7	K	9.5		54.0	18.4	
8.3	35	8.0	21.6	K	9.0		6.7	6.4		8.9		35.3	43.7	K*b*	8.3	55	25.5	20.9	K	9.5	31	15.1	36.4	*R*
9.3		9.5	48.6		9.5		47.3	33.1	B	9.5		39.0	5.2		9.0		27.9	52.9		9.5	32	30.2	50.7	
9.4		30.2	53.8		9.4	58	14.8	57.2		9.1		49.3	40.7	K	9.3		32.4	12.0		9.4	33	19.1	10.8	
9.3		37.2	15.2		9.3	59	7.3	34.9		9.4	28	28.0	57.3		8.4		36.7	7.4	K	9.1		19.6	40.6	R*b*
9.5	36	9.0	13.2		9.5		33.0	55.5		9.5	29	2.1	7.5		9.4		44.0	53.5		9.5	34	21.5	15.7	
8.9		19.2	59.3	K	9.3		45.3	37.3		8.6		13.8	25.7		9.5	56	11.7	8.1		9.5	35	32.0	43.1	
9.5		31.8	11.5		9.5		52.4	55.6		9.5	31	15.3	22.8		8.5		27.7	34.3		9.5		42.5	19.0	
9.0		34.0	34.1		7.9	0	23.8	29.4	K*b*	7.1		15.8	0.8	K	8.0	57	12.5	13.5	K	9.5		45.2	10.4	
9.5		51.1	28.4		8.8		33.8	19.7	*B*	9.1		20.7	1.7	*a*	9.5		48.7	4.9		9.5	36	9.5	34.5	
9.0		51.2	10.5	K	9.5		55.5	2.4		9.2		22.3	42.5		9.5	58	29.5	14.0		8.5		40.8	40.4	
8.9	37	16.5	15.6	K	9.5	3	58.2	37.8	B*b*	9.1	32	53.4	53.2	*b*	9.5	59	31.7	7.2		9.5	37	17.3	51.2	
9.5		32.5	27.8	*a*	9.5	4	11.3	21.3		9.5	33	10.9	7.7		9.5		38.6	55.5		9.5		18.3	33.8	
9.1		41.6	1.5	*a*	9.5		30.9	3.7		8.9		23.8	45.3		9.3	0	16.4	43.0	*b*	9.0		29.1	12.3	
9.5		49.7	28.3		9.4	5	15.3	51.8		9.5		37.7	7.3		7.3		34.1	14.2	L	9.5	38	1.8	23.0	
9.5	38	21.2	27.7		9.5	6	8.0	7.0		9.5	34	10.8	33.8		9.5		58.3	26.4		7.5		11.2	6.2	K
9.3	39	14.1	12.5	*a*	9.5		22.2	49.2		7.0		40.1	7.8	K	9.4	1	31.1	13.9		9.5		16.6	6.6	
6.8		28.3	7.5	K	9.3	7	45.7	48.8		9.1	35	16.9	4.9	*a*	8.5	3	49.6	35.6	K	8.5		51.5	43.7	K*b*
9.0		39.5	14.5	K	9.5		54.5	8.4		9.5		33.3	47.2		8.8	4	3.1	25.1	K	9.0	39	12.5	27.5	
9.4	40	18.2	17.0		8.9		55.2	5.4		9.5	36	1.1	2.5		9.3		50.9	59.6	B	9.4		24.3	31.4	
9.4		31.1	32.3		9.5	8	1.7	37.8		9.5	37	0.7	43.6		9.5		57.1	53.4		9.0		46.7	2.8	
9.4		51.0	49.1	B*b*	9.4		6.2	1.8		9.1		26.6	41.5	*b*	7.8	5	1.9	35.8	K	9.3	40	11.7	5.7	
9.4	41	9.0	14.8		8.2		6.8	41.4	K	9.4		31.3	33.0		8.8		9.6	20.4	K	5.2		49.5	41.4	K
9.5		20.0	8.7		9.5		32.2	34.6		9.0		43.5	11.3	K	8.0		10.3	43.8	K	8.0		27.1	21.9	K
9.5		40.2	27.4		9.3	9	20.8	54.5		9.4		48.7	49.0		9.5	6	0.4	54.3		9.5	41	4.5	54.5	
9.5	42	14.4	32.1		9.5		50.7	57.8		9.2	38	9.8	47.6		9.5		7.1	15.9		8.2		30.2	41.7	L
9.5		55.0	36.0		9.5	10	17.0	1.0		9.3		18.8	43.9		9.5	9	15.5	44.8	*b*	9.0		44.5	48.2	
9.3		58.7	12.8		9.5		35.0	13.5		9.5	39	32.4	28.7		9.5	11	42.8	37.5		8.3		47.1	59.5	K
5.5	43	10.8	20.1	K	9.5		37.0	30.1		9.5		51.1	7.1		8.2	13	26.3	7.1	K	8.0		47.6	6.0	
9.5		58.5	45.9		9.5		58.4	53.1		9.2	41	51.7	45.8		9.0		47.1	17.2		9.4	42	2.8	21.4	
9.5	44	7.8	36.5		9.5	11	9.2	26.2	*b*	9.0	42	35.7	1.7	B	9.5		56.1	47.6	*b*	9.3		16.9	7.1	
7.8		21.2	5.9	K	9.5	14	45.7	24.8		9.0		42.1	47.3		9.5	15	15.7	0.7		9.5		46.9	6.3	
9.5		56.2	47.6		8.7		59.3	54.5	K	9.5	43	11.8	44.5		9.5		17.2	52.8		9.5		54.8	33.2	
8.0	46	41.5	42.0	K	9.5	15	18.4	58.3		9.5		20.3	18.7		9.5		48.0	57.0		8.3	43	42.5	24.8	
9.5		53.5	8.6		7.9		29.0	11.0	K	9.4		55.2	3.8		8.0	17	10.0	28.2		9.3		55.2	13.1	
9.5	47	2.8	1.4		9.5		47.0	30.1		8.4	44	6.3	42.5	K	9.5		11.6	41.0		9.5	44	35.9	9.0	
8.9		48.2	56.2		9.5	16	7.0	16.0		8.4		7.1	47.4	K	9.5		42.4	44.2		9.5	45	45.1	12.2	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*31.73*	*3.05*		*10pr.*		*31.96*	*2.89*		*10pr.*		*32.23*	*2.66*		*10pr.*		*32.44*	*2.40*		*10pr.*		*32.73*	*1.97*	

501—560

	3ᵐ—4ᵐ		+10°	
m		″	′	
9·3	45	53.2	4.4	Kb
8·8	47	15.1	52.3	K
9·0		20.8	21.0	
9·5		58.2	6.2	
9·5	48	12.2	59.7	
9·5		17.1	37.6	
9·5		17.9	59.8	
9·4		21.2	1.4	
9·5		22.6	21.4	
9·5		28.4	58.3	
9·0	49	12.0	27.2	
9·5		38.5	32.0	
7·7	50	40.8	35.8	
9·5		48.9	7.3	
9·3	51	28.1	36.2	
9·5		58.7	40.6	
9·4	52	8.5	37.9	
9·5		15.4	22.2	B
8·9		25.4	22.9	B
9·0		52.1	23.8	
9·2		53.7	6.9	K
9·5	53	2.3	10.1	
9·5		11.7	2.5	
9·5		13.3	37.6	
9·0		14.7	9.7	K
9·5		30.6	9.0	
9·5		34.8	26.9	
9·5		59.2	9.4	
9·2	54	5.8	53.5	K
9·4		57.3	58.3	K
9·3	55	13.7	10.0	
9·5		58.0	29.6	
9·5	56	46.4	13.3	
9·5	57	44.6	59.9	
9·5		47.1	52.9	
9·5		48.0	40.9	
8·5		54.8	35.0	K
8·3	59	11.5	24.3	K
9·0	0	53.2	4.7	K
8·8	1	2.5	32.8	K
8·5		11.0	22.6	K
8·3		54.5	24.6	K
9·5	2	1.0	51.4	
8·2		4.5	27.7	K
9·2		13.0	34.0	K
8·9		25.5	29.0	K
9·0	4	15.4	56.1	
8·2		46.5	48.7	L
9·0		49.5	14.1	K
8·0	6	2.6	39.5	K
7·8		36.1	20.4	K
8·1	7	4.1	22.4	K
9·5	9	1.1	49.5	
9·3		5.8	17.5	b
8·5		40.5	40.7	K
9·5	10	46.4	51.2	B
9·5	11	10.7	7.0	
9·2		56.0	15.2	
9·5	12	0.8	21.0	
8·7		43.3	52.7	K
10pr.		+ 32.84	+ 1.78	

561—620

	4ᵐ		+10°	
m		″	′	
9·5	12	44.1	22.8	
9·5	13	7.1	22.0	
8·5		10.8	10.6	K
8·9		18.5	18.2	K
9·0		44.1	24.8	K
9·5	14	2.1	35.6	
9·4		10.2	17.5	
9·3		24.5	58.1	Kb
9·3	15	24.1	28.7	Bb
9·5	16	33.5	27.2	
9·5		41.1	40.5	
9·5		54.5	57.8	
9·5	17	34.0	19.4	
9·5		52.2	52.4	
9·5	18	23.8	7.6	aBb
9·5		49.0	32.6	
6·4	19	28.3	52.6	K
9·4	20	28.7	42.4	B
9·0		32.1	39.9	K
9·5		33.4	53.7	B
9·5		58.5	58 9	
9·5	21	0.7	8.1	
7·0		45.9	11.7	Kb
9·4	22	25.2	8.9	
9·5		25.5	27.3	
9·0		40.8	17.0	K
9·5		55.0	46.5	
7·8		58.2	25.7	K
9·2	23	3.1	5.7	
8·6		10.0	55.6	K
9·2		29.7	29.7	
8·1	24	11.5	26.9	K
9·2		23.9	18.3	K
9·4		43.2	36.0	
8·2	25	49.7	13.0	K
9·1		56.0	2.7	K
9·5	26	16.0	30.6	
8·3	29	9.7	32.8	L
9·5	30	42.3	8.9	
~~9·5~~		~~46.0~~	~~44.3~~	
9·2	31	5.9	5.7	
9·2		6.3	14.5	
9·3		11.5	45.2	B
9·2		12.2	38.9	Bb
9·2		15.0	58.2	
*9·5	32	14.0	44.6	
9·5		45.2	21.6	
9·5	33	12.0	44.0	
9·5		20.3	47.4	
9·5		32.0	33.3	
9·5		42.0	40.7	
9·3		51.4	5.8	
9·5		59.0	12.8	
9·4	34	17.5	50.1	B
9·5		22.4	10.0	
9·5		31.7	4.0	
9·3		42.7	0.0	
9·5	35	28.2	52.5	
9·5		30.0	24.6	B
9·5		44.0	21.3	
10pr.		+ 32.98	+ 1.37	

621—680

	4ᵐ		+10°	
m		″	′	
5·6	36	26.0	52.7	K
9·5		44.9	46.9	B
9·5	37	9.3	15.4	
9·0		16.0	26.5	
9·5		30.0	49.3	
9·4		33.3	24.1	
9·5	38	56.3	53.0	
9·5	39	18.0	27.1	
9·1		31.1	25.8	b
9·5		42.5	35.9	
9·2		48.1	3.8	K
9·5		50.3	56.8	
9·5		58.7	41.2	
9·2	40	16.6	45.8	
9·5		19.1	16.9	
9·5		22.0	22.3	
9·5		25.0	39.9	a
9·5		28.0	39.7	
8·8		28.7	39.9	
9·0		30.9	42.3	
9·1		34.5	41.3	a
9·2		40.4	36.2	
9·1		44.6	37.0	
9·0		44.6	7.9	K
9·4		54.4	7.4	a
9·3	41	17.4	28.2	B
9·5		17.7	24.4	
9·5		25.4	36.2	B
9·1		26.5	44.3	K
9·5		48.3	29.3	
8·2	42	9.6	21.4	K
9·4		30.2	44.0	
9·4	43	8.3	53.9	
7·5		11.3	49.0	K
9·5		12.2	26.3	B
9·5		23.0	30.0	
9·5		24.7	47.4	
9·3		41.8	36.4	K
9·1		45.6	54.2	K
9·5		47.0	20.0	
9·0		58.3	33.3	K
9·5	44	4.3	23.8	
9·5		17.0	38.4	
9·4		27.0	34.1	K
9·4		34.0	36.3	K
9·5		49.9	7.6	a
9·5	45	35.7	47.0	
9·0		51.9	6.0	K
9·5		53.0	20.7	
9·5	46	9.3	25.8	
9·4		25.8	55.7	
9·5	47	22.7	7.8	
9·5	48	47.0	22.0	
9·5		48.5	46.2	
8·6	49	0.0	42.2	K
8·4		14.0	33.8	L
9·5		25.0	35.9	
9·5		27.5	11.0	
9·2	50	2.3	13.7	
9·3	51	6.2	0.5	
10pr.		+ 33.06	+ 1.11	

681—740

	4ᵐ—5ᵐ		+10°	
m		″	′	
9·5	51	8.3	37.7	
9·0		38.1	6.0	Kb
9·3		48.7	43.9	
9·5	52	0.0	16.8	
8·0		1.9	9.7	K
9·1		21.8	3.2	a
9·4		41.4	45.2	B
7·5		42.7	41.8	K
9·5	53	5.0	27.7	
9·5		9.3	18.2	
9·5		9.7	51.5	
9·2		48.1	59.1	
9·5		58.0	26.1	
9·1	54	0.9	1.7	ab
9·3		0.9	11.1	
9·4		20.3	23.5	
8·9		52.0	43.9	K
9·3		59.1	58.8	
9·5	55	3.4	3.2	
9·2		29.4	54.2	b
9·2		46.0	39.8	
9·0		50.3	35.7	
9·5	56	6.7	8.2	
9·5		43.7	18.7	
9·3		49.9	2.6	
9·5		59.7	25.2	a
9·0	57	42.3	26.2	K
9·1	58	0.4	8.1	K
9·5		3.7	34.6	
9·5		12.0	56.5	
8·7		20.2	6.2	K
8·3		31.3	25.2	K
8·1		40.3	29.4	K
9·1		53.4	48.1	b
9·5	59	23.4	57.4	
9·5		30.0	6.7	a
9·5		34.0	13.3	
7·1		45.4	41.8	L
9·5	0	43.3	11.1	
9·5		47.7	48.5	
9·1		59.0	13.7	ab
9·5	1	3.3	34.2	
9·5		37.8	18.9	
9·5		54.9	7.5	
8·2		57.6	42.2	K
9·5	2	44.4	47.3	
9·5	3	30.0	16.4	
8·9		53.3	15.7	B
9·5	4	4.4	49.9	
9·5		19.0	22.7	
8·4		33.8	13.9	L
9·3	5	16.4	18.4	
9·1		20.6	34.6	K
9·5		40.5	13.0	
9·5		42.4	11.9	
9·3		58.5	48.8	K
9·0	6	4.1	45.6	K
9·5		23.5	47.4	
9·5		28.5	16.9	
9·5		43.1	36.7	
10pr.		+ 33.10	+ 0.89	

741—800

	5ᵐ		+10°	
m		″	′	
9·0	6	45.9	43.3	Kb
9·5	7	22.7	46.8	
9·5		35.7	37.1	
9·0		48.0	57.2	
9·5		51.4	39.4	
9·0	8	9.9	1.7	
9·5		27.7	55.0	
9·5		38.1	36.4	
9·4	9	40.1	59.8	
9·5		47.7	32.2	
9·5	10	32.1	12.0	
8·5	11	5.6	22.6	Kb
9·5		7.4	55.5	B
9·2		15.2	6.0	
8·9		16.7	34.1	K
9·3		28.5	13.4	
9·5	12	16.7	8.5	
7·0		21.9	44.5	K
9·5		53.9	38.5	B
7·0	13	9.7	57.3	K
9·5		32.0	30.5	
9·1		39.0	10.8	Kb
8·7		57.1	6.7	K
9·5	14	16.7	25.5	
9·5		17.4	51.7	
9·0		22.6	26.1	K
9·5		51.6	49.2	
9·1	15	3.0	56.7	
9·3		37.5	1.9	
7·3		51.7	56.5	K
9·5	16	14.0	7.1	
9·4		21.1	7.8	b
7·9		56.8	59.2	K
9·5	17	25.0	57.5	
9·5		53.3	53.5	
9·5		59.7	10.1	
9·5	18	23.7	36.0	
9·5		29.0	56.2	
9·5		52.8	31.6	
9·5	19	31.1	30.8	
9·0		37.6	35.0	
9·4		41.0	6.5	
9·4		42.5	39.2	
9·4		47.4	45.0	
9·5	20	6.3	10.9	
9·3		8.4	20.5	
9·3		21.8	12.4	
9·4		38.3	5.8	
9·4		38.7	27.1	
8·0		58.6	0.9	K
9·2		59.1	21.4	b
9·5	21	5.7	32.4	
9·3		9.6	12.6	
9·5		17.1	22.0	
8·8		18.4	0.9	K
8·6	22	14.8	54.3	K
9·5		27.1	15.0	
9·4		32.7	2.8	aR
9·5		43.3	7.3	
7·5		51.7	8.4	Kb
10pr.		+ 33.15	+ 0.64	

605 a

9·6	32	9.0	17.3	B

801—860

m	5ª	+10°	
7.4	22 54.1	2.6	K
9.5	23 5.6	16.6	
9.1	24.1	53.9	K
9.2	50.0	53.1	
9.3	24 18.3	12.1	
9.0	22.8	8.4	
9.1	47.3	53.9	*b*
9.4	25 2.4	6.0	
9.5	26.6	33.2	
9.5	30.8	59.0	
9.3	40.1	53.4	
9.3	26 16.8	25 4	
9.5	34.4	1.5	
9.5	45.4	47.8	
9.4	47.9	39.5	
9.5	48.4	27.5	
9.5	56.8	58.8	
6.5	27 10.4	8.1	L
8.7	24.4	25.0	K
9.4	40.0	57.0	
9.3	45.6	17.7	
9.5	28 18.8	56.5	
9.2	25.9	44.6	
9.5	32.7	35.6	
9.5	48.9	6.5	
9.2	56.0	11.5	*R*
9.2	58.7	22.0	*b*
6.5	29 1.2	56.0	K
9.5	7.4	52.0	
9.2	19.3	56.6	K
9.4	33.5	23.4	B
9.3	30 16.7	8.5	
9.4	26.3	8.5	*R*
9.5	30.5	9.5	
9.5	48.4	44.5	
9.5	54.9	25.7	
9.5	58.4	52.3	
8.5	31 17.5	10.9	S
9.3	34.0	42.0	
8.7	46.8	15.3	K
8.3	32 11.1	10.5	K*b*
9.4	20.5	39.1	
9.5	23.7	1.5	
9.5	36.6	35.0	
9.5	56.0	10.0	
9.5	33 4.4	50.6	
9.4	6.1	6.0	
9.4	6.9	40.9	
9.5	24.3	14.3	
9.3	41.6	28.5	
9.4	44.1	3.6	*a*
8.9	49.5	1.3	B
9.5	34 5.0	3.1	
9.5	11.1	44.4	
7.2	29.3	27.5	K
9.5	34.7	56.1	
9.4	48.3	29.1	
9.5	35 12.2	59.2	
8.2	19.4	26.0	K
9.5	27.6	47.7	
	+	+	
10pr.	*33.18*	*0.45*	

861—920

m	5ª	+10°	
9.5	35 28.0	58.9	
9.5	45.9	19.4	
9.5	36 21.4	48.0	
9.5	27.7	34.7	*a*
9.5	30.1	25.5	
9.2	35.8	12.2	*R*
9.5	40.5	44.5	
9.5	50.7	14.8	
9.2	54.8	58.1	
8.7	37 0.1	26.4	K
9.2	4.1	33.1	*a*K*b*
9.3	23.4	11.1	
9.3	23.7	0.9	
9.5	33.5	36.2	
9.5	40.1	22.0	
8.5	58.4	44.1	K
9.4	38 4.3	14.2	
9.0	7.3	1.9	
9.5	11.0	41.7	
9.5	13.4	7.9	
9.5	14.9	34.7	
9.5	18.7	9.1	
9.4	28.3	2.4	
9.3	33.8	56.7	
7.5	37.7	52.5	K*b*
7.7	40.7	58.6	K
9.5	39 10.7	40.7	
9.4	24.3	3.5	
9.5	40 1.4	7.3	
9.5	3.7	36.8	
9.5	4.0	11.1	
9.5	25.1	17.8	
9.4	39.3	4.5	
9.5	52.8	27.3	
9.5	58.9	49.1	
9.5	41 20.1	11.1	
8.2	33.4	39.4	K
9.5	35.3	3.8	
9.5	37.4	43.8	
9.5	57.3	8.5	
9.3	42 3.1	35.5	
9.2	7.1	19.6	
8.8	34.2	29.4	K*b*
9.0	44.7	23.0	
8.5	53.2	33.5	K
9.3	43 6.6	40.9	
9.3	7.6	44.8	
8.9	26.8	12.0	
9.1	28.8	32.0	
9.0	45.7	23.6	
8.6	49.3	38.4	K
9.3	44 7.0	38.4	
9.0	25.6	6.2	K
9.5	45 5.5	29.9	
9.3	15.0	59.6	*b*
9.5	16.4	16.2	
9.5	29.5	5.5	
9.1	31.7	23.2	
9.5	35.8	46.8	
9.5	44.6	21.1	
	+	+	
10pr.	*33.19*	*0.29*	

921—980

m	5ª	+10°	
9.5	45 52.0	12.0	
8.5	58.1	13.5	K
9.4	59.6	33.1	
9.4	46 4.3	45.3	
9.4	4.9	51.3	
7.6	8.8	12.3	K
6.5	11.7	32.9	L
9.5	42.1	17.5	
9.5	56.1	32.0	
9.5	47 13.2	53.8	
9.5	15.0	8.5	
8.4	17.8	26.5	K
9.5	25.5	59.4	
9.5	50.9	33.2	
9.5	48 33.4	27.5	
9.0	36.0	31.7	
9.1	43.9	16.1	
9.5	44.7	27.6	
8.2	49 8.1	12.2	*B*
9.5	17.4	42.9	
9.5	37.3	53.9	
9.5	45.6	8.5	
9.2	50 2.7	23.6	
9.5	3.5	7.0	
9.5	5.1	24.8	
9.5	10.2	3.3	
9.5	14.1	37.7	
9.1	21.6	7.3	K
9.0	29.3	11.5	
9.1	30.4	5.1	K
9.5	35.6	29.2	
9.5	36.1	22.7	
9.5	42.4	21.9	
9.2	45.6	11.6	K
9.5	51.3	34.9	
9.5	59.7	22.1	
9.5	51 3.7	16.6	
9.5	10.4	47.2	
9.5	33.3	12.0	
9.5	35.1	16.7	
9.5	38.7	51.8	
9.5	42.3	35.6	
9.5	47.1	57.8	
9.2	53.8	49.8	*b*
9.5	52 11.0	30.4	
9.5	20.6	13.4	
9.0	27.3	12.4	K
9.5	32.4	32.1	
9.5	32.7	51.4	
9.4	45.4	9.4	
9.4	47.0	5.3	
9.5	49.1	57.1	
8.5	53 0.4	23.5	B
9.5	16.1	21.9	
9.3	22.5	59.0	*a*
9.5	28.2	29.7	
9.1	29.8	54.3	B*b*
9.5	33.1	31.8	
9.5	36.7	54.2	B
9.4	46.3	37.9	
	+	+	
10pr.	*33.20*	*0.14*	

939ª 9.0 | 49 10.3 | 12.5 | B

981—1040

m	5ª—6ª	+10°	
9.4	53 51.8	57.6	
9.5	54 17.4	39.5	
9.5	46.4	18.5	
9.5	51.1	8.8	
9.4	55 5.4	2.3	
9.5	24.0	39.0	
9.0	28.5	37.7	K
9.3	41.3	35.7	*a*
9.1	41.8	8.0	*ab*
9.2	54.1	14.6	
8.2	56 39.4	30.4	L
9.3	42.9	21.0	B
9.5	48.3	48.6	
9.5	52.8	37.7	
9.0	54.0	53.8	K
9.5	57 12.4	36.4	
9.2	26.6	30.1	K
9.5	28.8	58.0	
9.5	32.1	17.3	
9.1	47.1	58.8	
9.4	58 3.8	22.9	
9.5	14.1	58.0	
9.5	16.0	24.2	
7.6	26.1	45.1	L
9.4	27.6	9.5	
8.8	35.4	50.8	
9.0	37.1	35.0	
9.5	42.0	49.7	
9.4	45.1	26.4	*a*
9.5	56.4	18.6	
9.4	58.0	12.6	
9.4	59 23.1	21.8	
9.5	23.5	13.7	
9.5	24.3	45.5	
7.3	34.8	27.9	L
9.5	53.1	29.8	
9.5	54.4	0.1	
9.5	0 8.5	31.0	
9.3	28.1	43.9	
9.5	48.3	27.2	
9.3	1 13.9	44.7	
9.3	21.1	23.7	
9.5	27.6	5.2	
9.5	52.1	1.5	
9.3	52.8	53.4	*b*
9.5	53.4	11.4	
8.8	2 6.1	30.1	
8.8	18.1	19.7	
9.5	19.4	28.0	
9.1	35.1	0.3	*ab*
9.5	49.3	6.4	
9.5	53.5	23.4	
9.4	3 13.8	2.1	*a*
9.3	18.8	53.8	
9.5	27.5	50.0	
9.5	32.0	29.0	
9.5	39.0	41.7	
9.5	41.3	47.6	
9.3	55.1	9.3	a*B*
9.5	58.4	29.5	
	+	+	
10pr.	*33.20*	*0.01*	

1041—1100

m	6ª	+10°	
9.5	4 0.3	18.1	
9.5	8.5	25.8	
9.3	11.1	13.9	
7.5	16.0	22.1	L*b*
9.5	21.6	20.3	*a*
9.4	23.0	11.9	
9.5	30.2	30.3	
6.9	59.1	19.5	L
8.9	5 1.9	57.5	K
6.5	9.8	40.3	L
9.3	16.9	10.1	
9.5	18.0	13.6	
9.5	18.5	23.7	
8.1	27.5	17.0	K
9.5	33.4	40.3	
9.5	48.6	52.3	
8.9	6 19.0	10.2	K
9.5	19.7	36.8	*a*
9.5	21.2	39.6	
9.0	27.5	20.7	K*b*
9.5	34.5	22.9	
9.5	46.0	2.7	
9.5	46.9	12.2	
9.3	7 5.8	4.8	
9.3	6.9	1.3	
9.4	12.0	23.6	
8.6	27.5	37.2	*B*
9.5	28.9	11.9	
9.5	47.5	49.6	
9.5	48.7	58.9	
7.0	56.3	19.9	K
9.5	58.1	36.9	
9.5	8 12.2	25.7	
9.5	26.8	58.5	
9.5	33.7	43.1	
9.5	59.5	10.8	
9.5	9 10.6	25.8	
9.5	14.9	36.1	
8.9	16.4	58.2	
9.5	23.5	9.8	
9.2	45.1	50.5	
9.5	46.3	9.1	
9.5	10 39.5	4.9	
9.5	43.8	20.2	
9.2	57.9	22.7	K*b*
9.5	59.0	25.3	
9.0	11 1.9	30.0	K
9.2	5.6	40.5	K
9.0	19.3	46.8	
9.5	23.8	42.8	
9.5	53.8	53.6	
9.5	57.5	25.7	
9.5	12 20.0	41.3	
9.5	29.5	40.1	
9.5	30.2	32.9	
9.5	38.7	4.8	
9.3	43.9	22.9	
9.5	46.1	14.2	
8.9	49.1	58.7	K
9.5	13 9.6	22.4	
	+	—	
10pr.	*33.20*	*0.12*	

1067ª 8.7 | 7 27.8 | 37.2 | B

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	6ᵐ		+10°			6ᵐ		+10°			6ᵐ		+10°			6ᵐ		+10°			6ᵐ		+10°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
8.7	13	35.8	56.9	K	9.5	23	26.3	41.6		8.7	33	0.7	36.6		9.5	40	54.8	53.5		9.2	48	55.3	43.9	*a*
9.5		42.7	19.1		9.4		34.2	52.6		9.5		1.5	0.6		9.5	41	2.1	17.0		9.3	49	5.5	44.4	*a*
9.3	14	1.4	32.5		9.4		42.9	26.1	*a*	9.4		3.5	1.1		9.5		4.0	47.1		9.1		32.9	6.8	*ab*
9.2		1.9	57.5		9.5		50.8	22.2		9.5		5.6	2.6		9.5		34.4	14.5		9.5		34.8	24.9	
9.3		2.8	56.1		9.5	24	13.7	29.4		9.5		8.0	15.8		9.2		40.5	39.9		9.0		45.0	44.8	
9.0		4.6	5.4		9.0		22.8	4.1	K	9.2		8.7	25.0		9.5		45.6	53.5		9.5		49.0	9.3	
9.0		18.0	49.6	K	9.5		23.2	23.4		9.2		10.3	1.1		9.5		50.0	56.6		9.5		49.4	49.5	
9.5		18.0	48.6		9.5		28.4	34.3		8.8		44.1	10.3	K	8.8		51.2	57.7		8.9	50	1.3	40.7	K
9.4		21.5	44.4		9.4		28.6	44.7		9.5		49.4	49.6		9.0	42	8.4	11.7		9.5		4.7	50.0	
9.5		35.6	7.7		8.3		37.8	31.6	K	9.5		51.0	9.5		9.4		11.5	9.0		9.0		7.5	41.2	
8.9		37.6	9.9	*Kb*	8.2		49.3	15.8	K	9.5	34	5.7	30.1		9.0		17.7	52.9		9.5		9.7	47.7	
9.5		40.2	34.5	*a*	8.7	25	3.8	25.5	K	9.5		12.8	52.6		9.5	43	2.6	30.2		9.5		22.8	32.6	
8.3	15	5.4	14.3	K	9.4		9.6	5.1		9.2		20.0	17.3		9.2		12.6	52.3		8.9		24.2	1.7	
9.4		23.0	36.7		9.5		11.7	3.1		9.2		28.2	58.8		9.5		15.8	4.7		9.5		30.2	44.2	
8.8		28.1	35.6		9.3		25.0	42.9		9.2		38.6	14.4	K	9.4		17.4	48.4		9.5		47.6	30.4	
9.5		30.4	6.7		9.5		31.6	22.7		8.5		41.2	27.9	K	9.3		26.4	12.1		9.4		48.9	27.0	
8.7		31.1	55.3	K	9.2		32.8	14.8		9.3		43.6	39.2		9.4		28.8	37.1		9.5		59.4	54.3	
9.5		48.9	55.2		9.0		35.8	38.3	K	9.5		56.4	28.3		8.9		31.3	58.2		9.5	51	17.0	33.7	
9.3	16	8.9	40.5		9.3		37.7	7.7	*a*	9.5	35	7.5	24.4		9.5		39.5	46.3		9.1		20.5	56.7	
8.8		8.9	49.5		8.9		49.5	17.2		8.8		15.9	18.6		9.5		45.7	9.2	*a*	9.0		27.0	46.6	K
9.4		16.8	28.5		9.3		51.9	9.0	B	8.8		23.4	51.9		8.1		55.3	58.1	K	9.5		27.0	48.3	
9.5		21.7	9.4		9.2	26	8.3	2.7	B	9.4		28.8	39.8		9.4	44	0.8	36.1		9.5		46.4	44.9	
9.5		25.4	26.4		9.3		25.1	25.4		8.5		31.8	42.9	L	9.3		3.9	58.2		9.3		47.6	51.2	
9.5		27.8	43.9		9.1		37.2	48.0	*b*	9.5		41.0	21.9		9.5		45.3	10.7	*a*	9.5		50.0	1.6	
9.5		34.9	0.3		9.5	27	13.0	18.4		9.5		51.2	16.7		9.5		50.0	30.1		8.8	52	1.2	55.7	
9.5		39.6	44.3		7.0		19.0	6.4	K	9.5		52.9	24.4		9.5		52.6	53.4		9.5		5.4	13.8	
9.4		52.0	54.7		9.5		19.0	40.9		9.5	36	10.8	13.8		9.5	45	4.1	3.0		9.0		6.8	7.5	
8.0		59.8	35.8	S	8.6		24.6	57.4		9.5		27.7	14.2		8.8		6.3	39.4		9.2		29.7	46.4	
9.2	17	10.0	45.5	K	9.5		41.2	39.7		9.0		40.0	51.3		9.5		8.8	51.2		9.4		46.8	37.2	
9.0		17.9	56.5	K	9.5		56.6	3.0		9.4		40.7	46.7	B	7.7		13.4	45.7	L	7.2		58.0	49.6	K
7.8		19.1	53.1	K	9.5	28	3.4	28.1		9.4		53.7	57.5		9.3		18.0	57.8		9.3		59.7	43.1	
9.5		54.9	55.1		9.5		6.1	0.6		9.5		54.8	3.9		9.5		42.4	59.9		8.9	53	9.5	25.8	
9.2	18	2.7	38.1		8.1		9.0	23.7	L	8.2		57.6	53.6	L	9.5		47.8	48.4		9.2		26.8	21.2	
9.4		5.7	39.2		9.5		22.4	38.8	*a*	9.5	37	8.1	10.0		9.5		56.9	9.3		9.2		27.5	2.3	
9.4		24.7	37.5		9.5		32.3	19.1		9.2		9.2	15.8	*b*	8.2	46	4.7	41.9	K	9.5		28.5	8.5	
9.5		35.4	23.2		9.5		37.5	41.6		8.7		24.9	59.0		9.0		22.0	13.2	K	9.3		36.8	2.2	
9.5		40.0	29.8		9.3		44.0	2.0		8.8		32.1	30.7		9.5		25.3	23.9		9.5		49.2	58.1	
8.8	19	1.8	55.7	K	9.3		48.5	44.4		9.5		37.2	1.0		9.5		26.8	28.3		9.5		59.0	28.9	
9.5		15.7	31.0		9.4	29	1.8	20.0		9.3		42.4	59.7		9.4		31.0	31.0		9.5	54	0.7	55.6	
9.0		17.2	24.4	K	9.5		24.1	25.6		8.7		45.3	53.6	K	9.3		34.7	37.1		9.5		2.1	43.0	
9.4		33.5	20.1		7.1		35.7	58.3	K	9.5	38	37.4	58.2		8.8		34.7	52.5	K	9.5		19.4	42.8	
9.3		39.2	21.0		9.4	30	2.2	0.2		7.5		45.6	53.4	K	9.5		36.9	34.1		9.3		35.6	56.9	
9.5		51.0	9.4		9.5		20.7	11.4		9.0	39	3.3	10.2		9.5		41.2	2.8		9.5		37.8	10.9	
9.5		59.1	49.3		9.4		28.5	27.3		9.5		5.6	32.2		9.1		44.3	53.7		8.8		39.8	17.2	
9.1	20	0.0	5.1	*ab*	9.0		31.9	43.3		9.5		36.7	55.8	*a*	8.5		46.6	43.8	K	9.5		43.5	21.8	
9.5		7.3	6.5		9.3		46.3	45.8		9.5		51.8	31.2		9.2	47	1.2	2.1		9.5		43.9	12.1	
8.8		10.1	12.7	K	9.5		46.8	51.0		9.3	40	0.3	11.2		9.2		8.7	17.5		9.5		55.4	48.5	
8.8		17.3	26.6	K	9.0		50.3	46.4		9.3		2.5	35.5		9.5		10.0	24.2		9.5	55	5.9	51.6	
6.6		18.4	23.5	K	9.5	31	11.9	10.0		9.0		7.8	55.1		8.9		53.1	35.7		9.4		11.3	6.2	
8.8		49.0	19.1		9.5		16.7	40.6		9.1		10.2	20.5	K	9.5		53.3	44.1		9.3		23.9	27.6	
9.4		54.7	22.1		8.2		34.9	22.0	K	9.3		17.1	39.6		9.5	48	1.4	7.3		9.5		27.7	14.8	
8.9	21	20.0	58.8		9.5		51.3	23.1		9.4		19.4	59.2		9.5		2.2	43.9		8.6		38.5	58.8	K
8.0		40.1	45.3	L	9.1	32	6.4	59.7		9.3		20.6	8.8		9.5		20.5	40.9		9.5		47.5	31.0	
9.1	22	0.8	24.7		8.5		12.2	34.1		8.7		23.5	38.0	K	9.5		20.9	15.4		9.4		59.2	23.2	
9.0		17.4	31.7		8.8		35.1	31.2		9.3		23.8	35.8	B	6.1		26.9	8.4	B	9.2	56	2.4	6.6	*b*
8.3		22.5	13.1		9.1		38.5	5.7	*a*	9.3		32.8	19.0	B	9.5		39.0	1.0		9.0		33.3	53.5	K
9.5		22.6	52.5		9.5		42.0	16.0		9.4		33.6	18.9	*B*	9.5		39.5	12.0		9.5		42.9	38.0	
9.3		46.9	9.5		9.5		46.0	19.7		9.2		37.6	33.0		9.0		44.0	20.1		9.5		43.2	3.3	
8.3	23	10.4	2.2	P	8.7		51.3	9.7		9.5		37.7	44.0		9.3		45.2	30.1		9.5		45.8	8.4	
8.8		12.2	12.7		*var*	33	0.2	1.8	K	9.4		48.1	32.7		9.5		49.1	26.0		9.4		55.7	21.2	
10pr.		+ *33.19*	— *0.25*		*10pr.*		+ *33.18*	— *0.41*		*10pr.*		+ *33.17*	— *0.53*		*10pr.*		+ *33.15*	— *0.65*		*10pr.*		+ *33.13*	— *0.76*	

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ—7ᵐ		+10°			7ᵐ		+10°			7ᵐ		+10°			7ᵐ		+10°			7ᵐ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	57	1.7	15.8		9.5	6	14.2	23.6		8.2	15	47.9	59.0	L	9.0	29	42.1	55.0	K	8.0	42	32.9	7.7	L
9.4		8.0	25.9	R	9.5		23.3	30.4		9.4		51.4	35.8		9.2		51.0	56.4	K	9.3		54.0	3.6	
9.5		8.3	20.7		9.5		44.4	57.8		9.5		51.6	22.0		9.4		59.8	25.3		9.2		57.6	29.5	
8.8		21.9	45.8		9.0		46.9	13.8		9.5	16	24.0	58.5		9.4	30	21.4	47.9	B	9.5	43	6.0	47.5	
9.3		27.3	4.8		9.3		50.0	25.2		7.5		26.5	31.4	L	9.2		27.3	17.3		9.1		12.6	46.5	
9.5		28.0	36.2		9.2		55.2	16.0	*a*	8.7	17	7.1	25.5		9.3		47.5	5.1		9.5		36.9	28.2	
9.2		28.7	56.4		9.4	7	25.2	46.7		9.4		17.0	1.3		9.3	31	4.4	23.0		9.3		41.4	12.2	
9.2		34.9	57.8	K	9.3		34.3	53.0	K*b*	9.0		27.7	18.4		9.5		11.6	18.8		9.2		45.9	11.9	
8.3		40.5	36.1		8.7	8	4.0	30.0		9.5		33.1	11.8		9.0		31.1	42.4	K	8.7	44	3.5	37.3	
9.5		58.2	47.9		8.2		12.9	14.9	*B*	9.3		56.0	32.7		9.5	32	38.8	38.7		9.5		15.7	36.3	
9.5		59.5	6.7		9.5		15.1	19.3		9.5	18	22.5	21.0		9.5		39.7	56.9		9.3		48.8	51.4	
9.5	58	15.4	56.1		9.5		35.2	30.8		7.0		28.4	53.5	K	9.0		49.3	6.0		9.5	45	1.0	58.1	
8.5		17.5	29.0	K	9.1		45.0	3.5	*ab*	9.5		28.5	31.5		9.0	33	8.5	27.2		9.5		40.3	32.5	
8.7		37.1	26.5	K	9.2		51.7	51.4	K	8.8	19	3.5	52.7	K	8.8		15.1	6.4		9.2		52.5	13.3	*a*
9.3		43.6	25.3		9.4	9	12.5	15.0		9.0		10.6	29.2	K	9.5		19.8	8.6		9.2	46	39.4	16.0	
8.4	59	7.1	5.8	K*b*	9.5		13.7	47.8		9.2		21.6	21.9		9.5		24.9	3.5		8.7		46.0	14.2	R
9.1		7.5	22.7		8.7		27.6	32.4	K	9.5		48.4	27.8		9.5		28.8	4.1		9.2	47	2.7	45.4	*aB*
9.5		19.4	11.9		9.3		36.4	15.2		9.5		49.1	38.6		9.4		31.2	11.3		8.9		6.5	45.2	K
9.1		22.0	31.4		9.5	10	5.6	50.6		9.0	20	1.1	35.8		8.5		47.0	2.8	S	9.4		37.9	16.4	
9.2		23.7	45.0		9.3		5.6	8.8		9.5		2.0	26.7		9.0		56.4	42.5		9.0		43.0	37.5	
9.5		38.5	5.0		9.3		18.9	21.8		8.7		29.3	38.5		9.5		57.6	54.9		9.2		45.2	49.0	K
9.0		49.0	13.0	K	9.5		20.1	30.5		9.1		56.9	26.9	*b*	9.5	34	14.3	16.9		7.8		50.2	49.8	K
9.4	0	1.3	34.1		9.5		22.0	47.2		9.5		59.7	48.2		9.4		25.0	9.9		9.2		53.4	13.3	
9.5		14.6	54.9		9.3		26.2	24.8		9.5	21	13.2	20.6		9.5		28.4	32.4		9.4	48	48.7	39.6	
8.8		26.8	53.8	K	9.3		30.3	5.5		9.5		27.4	37.1		9.0		52.1	54.2	K	9.2		49.8	2.0	*b*
9.0		28.7	0.6		8.6		32.7	57.2		9.3		27.6	53.9		9.4	35	1.0	30.3		9.5	49	3.6	22.5	
9.0		32.5	32.3	R	9.5		44.1	48.2		8.0	22	8.3	21.2	K	9.5		7.6	53.4		9.5		22.1	27.8	
var		44.0	15.0	B	9.5		49.9	11.4		9.0		10.4	32.8		9.4		16.7	32.4	B	9.3		25.2	48.2	
8.3		58.2	16.3	K	9.5	11	4.0	14.2		9.0		22.0	10.9	K	9.5		16.7	28.5		9.5		47.1	24.8	
9.5	1	1.3	23.6		7.0		6.5	34.5	L	9.0		40.8	38.7		9.1		33.9	24.1	*b*	9.5		54.9	9.1	
9.5		7.8	53.3		9.3		7.2	36.0		9.0		50.0	48.3		9.4		47.5	38.2	B	9.5	50	7.5	55.1	
9.0		7.9	25.0	R	9.5		19.9	22.2		9.4		56.0	2.3		9.4	36	8.8	34.0	B	9.5		10.6	11.3	
9.3		15.6	22.1		9.3		25.8	10.3		9.0	23	0.9	7.0	K	9.5		29.9	22.0		9.3		14.2	1.1	
9.5		21.0	2.2		7.7		27.0	42.3	K	8.7		13.9	23.5	L	9.3		33.7	15.7		9.5		22.2	0.0	
9.5		37.9	36.9		7.7		35.2	39.6	K	9.5		22.2	33.3		9.5		57.7	12.7		9.5		33.2	45.9	
9.5		53.0	2.8		9.5		51.8	16.7		8.3		43.9	23.2	L	9.2	37	1.5	53.1		9.5		34.6	2.5	
9.5	2	1.1	22.6		9.0		59.0	47.2		8.5		50.6	7.6	K	9.5		27.0	2.4		8.3		49.3	30.9	K
9.0		20.5	58.3	K	9.5	12	11.9	45.3		9.3	24	26.0	3.1		9.5		27.0	27.2		9.5		51.0	38.2	
8.9		22.2	19.7		9.2		15.1	12.2		9.2		40.9	44.3	K	9.0		43.7	11.9	K	9.4	51	4.1	7.8	
9.3		31.7	33.7	R*b*	9.5		32.0	10.3		9.2		46.8	13.9		8.5		48.9	44.4	K	9.5		13.8	10.2	
9.3		34.3	44.9		9.5		33.4	18.9		8.8		51.4	52.6	K	9.5		55.4	55.9		9.5		23.4	44.3	
9.4		41.6	5.5		9.4		36.8	2.1		9.5	25	33.5	28.5		9.5	38	27.9	21.2		8.2		30.8	19.4	K*b*
8.9	3	11.2	22.8	K	9.5		42.0	2.8		7.0	26	6.8	52.9	K	9.0		33.0	46.3	K	9.5		51.1	54.6	
8.9		14.7	50.9	K	9.5		59.5	56.1		9.5		16.1	24.6		9.0		36.5	44.7	K	8.2		57.0	18.4	K
9.5		30.0	58.6		7.8	13	1.6	27.6	L*b*	9.4		23.2	16.0	*a*	8.8	39	1.9	44.0	K	9.4	52	2.2	58.0	
9.5		34.3	0.3		9.5		8.1	11.3		9.8		23.8	24.6		9.2		2.5	27.1		9.3		4.2	22.3	
9.3		46.5	27.2		9.0		16.5	46.9		8.5	27	1.9	17.2	K	8.8		43.9	23.3	K	9.5		8.8	12.7	
8.2		50.6	44.8	K	9.0		28.9	49.5		9.5		5.4	0.6		8.9	40	13.6	4.2	K	9.0		13.9	24.9	
9.5	4	0.9	34.1		9.3		41.8	0.8	*aB*	8.5		15.1	26.5	K	9.5		27.7	45.7		8.8		14.7	15.6	K
9.4		4.6	3.9		9.0	14	1.3	48.7		9.5		22.0	4.7		9.5		37.9	6.0		9.3		15.4	3.8	
9.5		11.0	42.1		8.8		2.2	15.4		9.5		25.3	39.7		9.4		50.0	7.5		9.3		26.5	44.5	
9.1		23.8	19.2		9.5		22.4	9.9		9.5		25.4	15.5		9.5		50.3	40.1		9.0		27.8	32.4	
8.0		30.7	26.4	K	8.5		32.2	31.7		9.5		50.0	52.3		9.5	41	9.8	13.6		9.0		31.5	24.9	
8.7		36.1	13.4	K	9.0		34.1	42.8		9.2		50.4	47.6		9.2		14.6	29.4	*b*	8.5		31.9	18.7	K
9.5	5	5.2	43.9		9.3		50.4	49.1		9.3		51.1	56.1		9.0		16.6	59.3		9.5		35.3	27.1	
9.5		7.0	20.8		8.5		51.0	7.3	K*b*	9.5	28	31.5	29.5		9.3		37.3	6.5		9.2		46.9	5.2	
9.5		15.1	19.0		9.0		52.2	35.6	K	9.2		33.9	6.6		9.3	42	2.0	23.5		9.2		50.2	53.0	
7.5		48.5	56.1	L	9.5	15	29.9	17.9		9.4	29	6.4	51.7		9.5		22.3	20.6		9.2	53	12.5	7.3	
9.3		59.3	31.6		9.5		33.1	45.5		8.5		19.8	37.7	K	9.5		23.4	13.2		9.0		12.8	49.6	
8.7	6	3.6	49.8	L	9.5		44.8	8.9		9.1		37.3	20.6	K	8.5		23.5	52.9	K	9.5		47.2	18.0	B
		+	—				+	—				+	—				+	—				+	—	
10pr.		33.11	0.87		10pr.		33.08	1.02		10pr.		33.04	1.18		10pr.		32.99	1.35		10pr.		32.92	1.54	

1701—1760				1761—1820				1821—1880				1881—1940				1941—2000			
	7ᵘ—8ᵘ		+10°		8ᵘ		+10°		8ᵘ		+10°		8ᵘ		+10°		8ᵘ—9ᵘ		+10°	
m				m				m				m				m				
8.5	53	47.3	1.4	B	9.3	7	11.4	21.2		9.5	25	54.1	10.1		9.3	42	1.8	58.0		9.3	59	52.4	34.6	
9.5		47.6	52.9		9.3		37.5	26.4		9.5	26	18.5	56.6		9.5		14.0	58.3		9.4	0	35.8	51.5	
9.1	54	1.0	24.6	Bb	8.8	8	55.1	54.6		9.2		30.4	47.3	K	9.5		30.8	22.5		9.4	1	21.5	54.7	
9.3		22.6	34.1		8.7		57.8	58.7	L	9.4		34.0	27.5		9.4		35.0	38.0		8.5		54.3	20.6	K
9.3		24.5	30.5		9.3	9	37.1	53.6		8.8	27	20.1	31.1	K	9.3	43	2.7	11.6	αB	8.7		56.3	46.9	K
9.5		41.0	51.7		9.3		55.2	7.5	b	9.3		25.8	41.4		9.3		3.0	1.6		9.5	2	10.7	22.3	
9.3		42.4	9.9		9.3	10	10.4	59.6		9.3		32.1	3.5		9.5		26.9	41.0		9.4		16.7	58.2	
8.8		56.7	15.5		9.0		13.7	53.7	K	9.3		38.7	10.3		9.5		39.5	37.0		9.3		32.3	45.7	
9.5	55	6.9	17.1		9.5		56.5	47.5		9.5		54.7	56.2		9.0		54.4	55.4		9.0		32.8	28.5	
8.0		18.7	20.8	K	9.3	11	17.7	13.4		9.1		56.1	55.7	B	9.2	44	7.0	57.9		9.5		51.4	31.8	
8.8		38.3	31.5	K	9.2		48.9	10.9	K	9.0	28	3.0	24.6	K	9.5		16.3	9.4		9.4		56.8	52.4	
8.8		45.1	53.2		9.3		52.9	10.5	K	9.5		13.0	50.9		9.1		18.8	51.6	b	9.2	4	8.5	21.0	
8.8		51.5	49.0		8.8	12	17.8	19.6		9.4		26.3	54.5		8.5		22.1	24.3	K	9.2		10.8	26.0	
9.5	56	6.2	1.8		9.3		24.1	42.7		8.5		32.9	46.6		9.5		23.6	33.8		8.7		48.0	28.5	
9.1		12.0	4.3	a	9.3		28.6	30.8		9.3		55.8	17.9		9.5		47.7	51.9		9.2		53.7	10.9	
7.8		24.3	39.1	K	9.0		33.7	57.8	K	9.0	29	6.7	3.9	K	8.8	45	2.9	17.8	K	7.8	5	33.9	53.9	K
9.0		32.0	30.5		9.5	13	9.7	13.6		6.0		14.9	10.0	Kb	8.5		17.5	42.0	K	9.5	6	39.9	4.3	
9.5		33.8	53.1	B	9.1		28.4	47.6	Kb	9.5		21.8	18.5		9.3		27.6	48.1		9.2		53.0	48.5	
9.4		37.5	23.6	B	9.3		46.5	4.8		8.8	30	5.9	33.5		8.3		31.4	10.5	K	9.4		57.0	54.7	
9.5	57	0.0	21.5		9.5		56.3	43.0		7.4		15.3	4.6	Kb	8.8	46	24.4	21.4	K	9.4	7	16.9	58.3	
8.0		5.1	54.5	K	8.2	14	1.1	31.7	K	9.5		35.6	18.1		9.0		25.0	51.0	K	8.5		23.9	21.3	K
9.0		24.4	2.1		9.3		33.6	55.9		8.8		37.5	7.4		9.4		29.8	10.5		9.1		26.5	27.8	
8.5		39.2	16.6	K	9.5	15	12.6	30.2		8.8	31	5.3	39.4	K	9.5	47	35.0	26.1		9.5		28.6	1.7	
9.5	58	35.6	54.0		9.5		23.3	5.9		9.5		11.9	55.2		9.3		36.2	3.3		9.3		59.8	50.1	
8.2		54.4	9.6	L	9.1		57.9	21.3	B	9.3		30.0	53.2		9.5		52.8	33.4		7.8	8	0.2	58.5	Kb
9.4	59	1.4	1.1		9.2	16	36.7	55.5		9.3	32	2.9	22.0	a	9.4	48	7.0	15.9		9.4		46.9	4.2	
7.7		9.9	23.5	L	9.3		46.1	50.8	B	9.3		21.0	51.8		9.5		16.0	57.9		9.4		51.1	21.3	
8.8		16.9	32.7		9.1		49.3	50.3	B	7.8	33	1.5	20.0	K	9.5		27.6	48.9	B	9.2	9	34.6	9.4	
9.5		27.8	59.7		8.5		53.0	12.6	L	9.3		1.8	56.6		9.4	50	4.3	38.3		9.4	10	33.6	28.1	
8.8		34.2	13.5	K	9.3		53.5	34.7		9.2		4.1	30.5	K	9.3		24.9	41.5		9.1	11	22.2	38.1	
9.3		47.3	41.6		9.3		58.4	45.0		9.5		14.4	30.3		8.5		47.7	0.7	K	9.2		31.3	47.7	
9.5		53.1	4.5		8.7	17	7.0	25.1		9.5		41.7	51.0		9.4		50.0	56.2		7.2		42.9	24.2	P
9.5		53.0	1.0		9.0		16.2	12.3	K	9.5	34	11.9	44.8		8.5		53.5	29.7	K	9.3		57.5	39.9	
9.5	0	26.5	3.3		9.5		18.6	59.0		8.9		16.9	56.9	K	9.4	51	1.7	53.4		9.2	12	2.9	42.2	b
9.3		27.6	9.0	αB	9.2		39.5	57.3		9.3		25.5	53.8	K	9.3		5.9	16.0		9.2		6.2	27.9	
9.0		33.2	56.9	K	9.0		57.8	17.3		9.5		38.4	52.4		9.4		19.9	25.7		9.5		57.6	56.4	
9.5		53.7	13.3		9.2	18	18.7	6.2		9.3		50.2	6.1		9.5		22.3	12.2		9.3		58.2	50.0	
8.2	1	7.5	55.5	K	8.3		23.9	0.4	L	9.3	35	3.9	52.6		9.5		28.6	51.9		9.5	13	16.5	29.9	
9.5		17.1	6.4		8.8		35.1	33.5	K	9.0		47.6	12.3		9.2	52	4.9	49.9		9.5		16.8	35.0	
9.5		58.7	13.3		9.3	19	28.7	46.6		8.7		55.9	0.6	K	9.3		11.5	13.4		8.5		35.8	10.0	K
9.5	2	45.7	58.9		9.2		30.1	40.4	B	8.7	36	1.9	48.1	K	9.5		24.4	10.0		9.4	14	4.7	56.7	
8.5		50.8	40.0	K	9.5		39.6	58.5		9.5		5.0	16.7		9.5		41.6	39.7		9.5		10.3	51.0	
9.5	3	4.0	50.6	K	9.5	20	27.3	40.4		9.0		11.7	56.5	L	8.8	53	32.8	32.7	K	9.5		15.9	13.8	
8.5		9.2	0.4	K	9.3		31.2	15.9		6.0		52.9	36.3	K	9.3		35.9	59.9		9.3		24.0	40.0	
9.5		16.6	39.3		9.3		43.3	4.4		9.5	37	5.4	57.8		9.4		44.2	16.3		9.5		25.0	24.0	
6.5		22.5	18.2	K	9.3		46.8	17.5		9.5		40.3	49.6		9.3		51.5	11.1		8.9		57.5	47.2	
8.7		41.6	6.6	Kb	9.3	21	6.2	45.6	K	8.0	38	11.3	27.9	K	9.5	54	12.9	54.5		8.8	15	24.1	45.0	Kb
9.2		56.9	54.2		9.5		7.1	53.3		9.3		35.2	41.2		8.7		23.4	40.6	K	9.1		59.3	28.2	
9.3	4	23.9	1.7	αB	9.3		37.7	11.6		9.5		39.2	7.3	αB	8.9		30.7	56.8	K	9.0	16	10.8	56.9	
9.4		29.1	54.0		9.0		57.9	41.7		9.4		41.8	23.9		8.9		37.0	52.0	K	9.1		37.3	10.1	a
9.5		55.3	16.9		8.5	22	2.2	56.6	L	8.7	39	19.3	8.6	K	9.1		40.0	42.3	K	8.5	17	2.0	9.0	K
8.0		59.8	0.6	K	9.5		48.0	12.6		9.5		54.2	37.9	B	9.5	55	7.6	36.2		8.1		22.7	6.0	K
9.0	5	10.1	52.5		9.5		51.1	6.5		9.3	40	16.0	1.4		8.5		31.5	52.3	K	8.6		46.2	48.9	
9.3		25.9	30.6		9.0	23	9.8	30.2		9.0		16.1	13.0		8.3		52.9	27.0	K	9.3	18	17.3	48.2	
8.0		40.5	49.3	K	9.5		46.6	56.6		9.5		29.0	16.0		8.5	57	19.0	18.6	K	9.1		28.5	47.5	
8.2	6	37.7	37.4	K	7.5	24	1.8	17.8	K	7.1		44.9	57.3	K	9.1	58	10.9	15.1	K	9.3		30.2	36.1	B
9.2		43.1	1.3	b	9.4		34.4	44.1		9.5		55.8	48.0		8.5	59	5.8	26.7	K	9.3		38.3	50.3	
9.0		46.8	38.7	K	6.8		46.9	35.0	K	9.5	41	21.3	45.0		9.3		14.6	14.1	K	9.4	19	16.7	45.2	
9.5		56.6	51.0		9.3		59.1	25.4	B	9.4		42.2	19.0		9.3		20.8	40.6		8.7		40.2	27.7	B
9.5	7	3.3	36.0		9.0	25	8.7	27.2	K	9.3		50.9	36.5	b	8.0		22.5	13.9	K	9.3		47.9	35.4	B
10pr.		+ 32.87	— 1.67		10pr.		+ 32.77	— 1.88		10pr.		+ 32.67	— 2.07		10pr.		+ 32.55	— 2.27		10pr.		+ 32.38	— 2.47	

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	9ᵐ		+10°			9ᵐ—10ᵐ		+10°			10ᵐ		+10°			10ᵐ		+10°			10ᵐ—11ᵐ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	19	58.1	46.0		8.5	42	25.4	20.3	K	9.5	5	19.3	28.4		8.8	32	33.9	34.5	K	9.5	57	12.0	28.4	
8.2	20	19.4	50.9	K	9.0	44	1.0	28.9	K	9.3		27.6	18.6		9.3		42.8	25.9		9.5		23.9	59.5	
9.4		32.8	23.9		9.3		17.3	44.7		9.5		31.8	52.6		9.2	33	17.3	1.0	*b*	9.0		39.0	20.9	
9.3	21	14.3	56.8		9.3		32.0	41.4		9.2		50.9	14.5	K	9.3		32.0	38.1		8.8	58	45.7	10.2	
9.3		29.3	54.6		8.8	45	26.5	17.1	K	9.6	6	23.0	52.4		9.3		32.7	48.1		8.5	59	3.4	45.3	K*b*
8.9		56.6	33.8	K	9.5		47.9	56.9		9.3		25.7	4.4		9.5	34	8.2	39.0		9.5		24.9	45.3	
8.8	22	2.5	28.0	K*b*	8.0	46	14.1	37.1	K	9.1	7	5.1	19.9	*b*	9.5		32.5	5.7		9.2		24.9	31.0	
9.2		48.3	35.2		9.5		30.6	28.4		9.2		30.7	59.0	*b*	8.8		55.4	46.8	K	8.9		31.4	24.2	
9.3		59.2	54.8		9.0	47	11.8	35.9		9.5	8	24.4	50.4		9.5	35	11.4	1.2	*aB*	9.3		37.6	53.3	B
9.3	23	3.6	22.0		9.4		21.7	53.0		9.5		35.4	25.6		9.0		42.5	51.3	K*b*	7.3		38.9	59.0	K
7.7		14.2	47.3	K	9.4		28.4	31.1	B	9.3		43.9	34.0		9.5		51.0	56.1		9.2		48.0	57.9	K
8.3		27.5	55.5	K	8.2		38.8	47.0	K	8.5	9	21.1	50.1	K*b*	9.5	36	4.9	35.0		9.0	0	24.4	59.4	K
9.1		56.9	59.3	K	9.5		39.2	12.4		9.5		56.6	25.0	B	9.5		7.0	26.8		9.5		35.0	8.3	
6.0	24	11.1	21.0		9.5	48	32.1	25.6		9.5	10	57.1	29.4		9.2		16.0	49.0		9.5	1	25.6	28.1	
9.3		12.1	21.3		8.5		33.2	56.3	K	9.2		59.4	51.2	R*b*	9.2		45.8	7.6		8.6	2	14.8	56.2	K
9.0	25	5.8	31.6		9.3	49	2.3	6.0		9.5		59.7	48.2		9.2	37	21.5	51.4		9.4	3	0.2	58.1	
9.4		21.1	16.5		9.5		33.0	48.9		9.5	11	13.9	31.5		9.0		26.1	17.3		*8.9		22.5	38.1	K*b*
9.4	26	3.6	57.8		9.5		33.9	58.3		9.3		45.1	27.1		9.3		57.8	42.7		*9.3	4	32.0	40.0	*a*
9.4		37.5	47.9		9.0		58.8	41.7		8.0		47.4	37.0	*L*	8.8	38	5.8	47.1	K	9.3		32.8	27.1	
9.5	27	1.7	58.8		9.3	50	3.7	2.8		8.7		53.6	1.0	K	8.8		39.8	15.5	K	8.5	5	10.3	39.3	K
8.3		7.6	19.5	K	8.5		16.9	22.8	K	9.3	12	34.7	32.1		9.5		53.6	29.4		9.3		27.3	40.0	
9.3		17.1	52.7		9.3		22.6	43.2		9.3		46.8	51.0		9.5	39	2.7	5.8		9.5		46.7	56.4	
9.2		22.4	54.3		9.3		44.5	43.2		9.5	14	18.0	26.1		9.3		34.3	59.6		9.4		53.5	3.6	*b*
9.3		43.0	31.4		9.0	51	32.9	52.2		8.9		45.2	31.1		9.0		37.9	0.9	B	9 3	7	41.2	46.2	B
8.8		46.9	54.0	K	9.5		34.0	3.3		9.3	15	25.5	45.8		9.2	40	53.6	41.4	R	9.4		48.3	46.9	
8.5	28	1.7	30.7		8.7		53.9	0.9		9.3	16	41.4	4.2	*b*	9.2	41	25.8	37.3		9.3		53.7	5.3	*a*
9.5		22.8	3.5		9.1	52	21.9	20.1	*b*	8.5	17	21.7	43.1	K	9.0		26.7	32.6		9.4	8	32.2	2.3	*aB*
9.5		30.6	14.8		9.5		29.9	44.1		9.3		30.1	19.7	*B*	7.6		27.2	55.7	K	9.0		44.5	2.4	B
9.2		43.0	28.7		9.5	53	4.0	3.7		9.5		39.7	22.3		9.3		52.7	34.1		9.3		55.0	8.6	
8.6		46.9	19.5	K	9.3		17.9	23.0		9.3	18	5.0	39.2		8.8	42	21.3	36.0	K	9.5		58.6	18.2	
9.4	29	4.3	16.5		9.5		59.1	19.2		9.5		20.3	4.0		9.5	43	12.0	11.0		9.1	9	37.0	47.3	K*b*
9.5		5.9	5.4		8.7	54	1.9	55.2	K	7.0	19	59.7	29.4	K	8.2		38.5	0.5	K	8.9	10	53.6	56.0	K
9.3	30	18.9	33.6		9.4		7.0	17.4		9.1	20	3.6	36.9	K	9.5	44	57.9	35.3		8.9	11	22.7	59.2	K
9.1		23.5	45.7	*b*	9.3		33.3	43.1		9.5		38.1	3.1	*a*	9.1	45	1.7	55.3	*b*	8.5		34.2	32.1	K
9.4		24.6	0.3		9.0		37.2	48.7	K	9.5		50.9	33.9		9.5		42.9	43.9		9.0	12	2.0	52.3	K
9.0		39.6	19.5		9.0		43.7	37.3	L	9.5	21	7.2	13.0	B	9.5		50.5	30.5		8.7		4.7	43.4	K
8.8		50.3	16.3		9.5		48.0	22.8		8.7		15.6	18.2	K	9.2		53.3	58.0		9.5	13	27.9	37.6	
9.3	31	7.7	12.9		9.5	55	6.9	36.7		9.5		20.7	55.2		9.1	46	54.2	50.6		9.5	14	53.8	24.8	
8.8		14.9	50.7		9.4		44.7	26.4	B	9.5		29.4	7.9		9.5	47	36.9	52.4		9.4	15	7.1	41.3	B
9.5	32	6.1	38.1		7.2		50.3	36.2	K	7.7		31.2	53.4	K	9.5		38.2	15.3		9.5		12.5	40.4	*B*
8.5		12.2	10.0	K*b*	9.5	56	15.0	18.8		9.2		35.0	1.1	*b*	9.1		39.1	43.6	*b*	9.5	16	46.8	3.5	
9.4		34.2	52.5		9.1	57	12.5	31.4	*b*	8.5	23	42.5	47.5	K	9.5		52.0	5.1		9.1		58.2	16.7	
8.7		46.9	4.9	K	9.5		18.3	42.0		9.5		54.3	55.9		8.8	48	15.7	53.3	K*b*	9.5	17	55.4	36.0	
3.7	33	25.6	32.5	K	9.5		19.6	59.3		9.1		59.5	23.8		9.0	49	58.6	32.4	R	9.3	18	0.2	51.6	
9.5		29.3	15.2		9.3		37.6	10.7		8.5	24	30.9	9.6	K	9.5		59.2	33.2	R	9.0		47.8	9.2	
8.9		44.4	7.7	K	9.5		40.9	23.5		4.1	25	10.9	2.7	K	9.0	50	19.9	27.0	K	9.5		57.6	5.6	
9.5	35	44.2	54.8		9.5		41.6	27.0		9.0		42.0	45.4	K	7.7		37.4	28.6		9.3	19	37.3	35.0	
9.4	36	34.3	19.5	*b*	9.3		56.9	22.5		9.5		51.9	52.7		9.5	51	10.0	1.4	*aB*	8.6	20	15.9	16.5	K
7.6	37	42.3	53.2	B	9.5	58	6.7	35.4		9.5		57.3	55.9		9.5		31.6	12.7		9.5		45.9	0.9	*aB*
9.4	38	18.9	44.0	*a*	9.5		43.0	5.5		9.3	26	49.8	42.7		7.5		58.2	42 4	K	9.5	21	30.1	18.9	
9.4		44.1	33.0		9.5	59	27.5	12.5		9.5	27	47.3	47.8		9.5	53	5.8	23.8		8.3		30.1	50.0	K
9.5	39	34.5	28.9	B	5.0	0	12.3	43.4	K	9.3		52.9	0.1		9.3		23.7	32.2		9.5	22	22.2	10.2	
9.5		43.8	5.3		9.5		23.9	3.8		8.5	28	33.1	21.0	K	9.5	54	34.0	56.5	*B*	9.5		59.3	7.3	
7.7	40	0.8	44.5	K	9.5		35.5	23.4		9.2	29	5.0	45.9	*b*	8.7		35.9	40.0	S	9.0	23	2.3	11.9	K
9.5		16.4	39.3		9.5	1	18.7	13.5		9.2		16.8	6.1		9.1		36.1	30.0		8.7		20.1	36.4	K
9.3		37.5	29.4	B	7.5		49.6	17.6	K	8.5		34.8	7.5	K	8.8		41.9	55.2	K	9.3		25.5	42.6	
9.4		39.5	53.4		9.5	3	17.2	37.3	*B*	9.3	30	31.0	36.5		9.5		52.5	7.9		8.5		31.0	25.2	K
9.0		40.7	1.5	K	9.5		25.2	38.3	B	9.5	31	0.0	54.5		9.5	55	5.7	24.6		9.5		52.9	26.2	
9 5	41	22.9	50.8		9.1		34.3	43.3	*b*	9.0		16.9	47.6		9.5	56	4.3	5.7		9.5	24	11.2	52.7	
9.4		58.6	27.9		9.5	5	12.9	34.4		9.5	32	32.3	55.3		8.3		22.3	44.6	K*b*	9.0		55.5	10.9	K
10pr.		+ 32.24	— 2.64		*10pr.*		+ 32.02	— 2.85		*10pr.*		+ 31.79	— 3.02		*10pr.*		+ 31.64	— 3.15		*10pr.*		+ 31.27	— 3.26	

2256ᵐ				
9.6	3	3.4	35.4	B
2257ᵐ				
9.7	3	33.0	16.5	B

2301—2360

	11h		+10°	
m	′	″	′	
9.2	24	55.5	19.1	
8.5	25	28.4	10.6	K
8.9		32.2	25.5	L
9.5		38.3	22.2	
9.3	26	9.1	11.0	
9.4		43.7	7.5	
9.5		54.6	35.9	
9.3	27	19.2	50.0	
9.5		58.6	43.3	
8.6	28	6.9	22.8	Kb
9.5		52.6	6.2	
9.2	29	25.3	19.9	B
9.5		26.1	24.5	Bb
9.3		37.8	28.0	
9.5	30	29.5	24.5	
9.5		36.9	2.5	
9.5	31	8.6	29.2	
9.3		17.7	30.8	
9.5		23.6	49.4	a
9.3		46.3	48.0	K
9.1		49.1	18.9	
9.2		53.8	53.8	K
9.0		59.8	16.6	K
9.0	33	31.3	5.0	
9.5		39.1	37.8	
9.5		41.6	47.6	
9.3	34	10.7	31.1	
8.9		26.5	37.4	
9.5	35	7.6	52.9	
9.5	36	2.7	44.0	
8.7		60.2	53.8	
9.5	37	56.3	12.5	
9.5	38	32.8	23.5	
9.0	39	41.9	15.8	
9.3		48.8	22.1	
9.5		59.1	28.5	
9.5	40	41.4	9.8	aB
9.2		49.0	47.3	b
9.3		57.7	2.7	
9.2	42	3.8	13.3	
8.2		54.1	52.1	K
8.2	43	1.2	36.0	K
8.5		12.8	19.1	K
8.5	44	24.1	47.8	K
8.8		34.7	1.1	
9.5		44.9	41.4	
7.9		57.5	44.7	Kb
9.3	45	25.5	46.1	
9.5		55.9	54.5	B
8.8		59.4	7.7	
9.4	46	20.9	24.5	
8.0		42.9	43.3	L
7.7		56.8	51.4	K
9.3	47	12.8	32.5	B
9.5		54.6	4.2	
9.5	48	17.3	6.5	aB
8.5		29.5	38.8	K
8.5		50.8	43.2	K
9.5	49	4.5	45.3	
9.5		10.8	7.4	

10pr.	+	−
	30.96	3.32

2361—2420

	11h—12h		+10°	
m	′	″	′	
9.5	49	53.9	29.9	B
8.7	50	19.2	56.1	Kb
8.7		58.2	21.4	K
9.3	51	8.2	39.6	B
9.1		14.6	9.1	a
9.4		49.0	40.7	B
9.5	52	5.2	57.3	
9.3	54	33.0	23.3	
9.2		53.9	57.5	ab
9.5	55	17.3	23.8	
9.5		25.5	30.3	
8.6		58.9	4.1	L
8.5	56	41.3	30.3	K
9.3		52.1	0.5	
8.2	57	38.5	3.2	K
9.5	58	0.4	6.4	
9.5		40.5	36.8	
9.3		38.7	56.6	
9.5		45.6	31.3	
9.5	59	29.2	38.3	
7.7		46.1	28.4	K
9.5	1	48.4	53.3	
9.4	2	29.1	13.2	aB
9.5		54.9	15.7	B
9.5	3	23.9	33.6	
9.5		25.9	53.0	
9.5		32.8	16.6	
8.4	4	35.3	7.4	K
9.0		42.5	22.6	
9.5	5	2.4	54.9	
8.1		31.4	51.6	K
7.7	6	6.1	51.5	K
9.1		18.9	33.5	b
8.7	7	40.1	47.5	
9.5	8	23.9	0.9	
8.9		25.3	9.0	
9.1		49.2	27.0	b
9.5	9	14.0	25.9	
9.5		53.3	34.4	
9.5	10	1.8	56.4	a
9.3		22.7	52.2	B
9.0		27.0	56.2	K
9.4		32.1	51.9	
8.5		50.5	41.1	K
8.7	11	24.2	54.0	K
8.6	12	1.1	16.2	K
8.9		3.0	41.5	K
8.5		17.6	50.4	K
9.5		36.2	25.0	
7.9		47.2	41.7	K
9.1	13	1.7	30.2	
9.4		3.1	46.6	
9.0		3.6	52.5	
8.8		42.8	11.5	
9.5	14	28.3	21.8	B
8.4		52.1	38.7	K
8.5		59.6	44.5	K
8.8	16	54.2	18.4	Kb
9.5		54.5	6.7	aB
9.5	18	10.2	2.7	

10pr.	+	−
	30.66	3.34

2421—2480

	12h		+10°	
m	′	″	′	
7.9	18	11.3	33.7	K
9.4	19	2.3	13.5	
9.5		51.1	50.2	
9.5		56.5	46.2	B
9.5	20	10.1	32.4	
9.3		18.8	9.1	
9.2		36.0	9.6	K
9.0		44.0	8.6	
9.5	21	32.4	46.6	
9.4	22	49.7	55.0	
9.5	23	2.2	51.2	
8.0		13.3	32.0	Kb
9.2		16.3	7.3	
9.5		30.1	38.8	
8.9		44.1	13.0	
9.5	24	44.4	8.3	
9.4	25	21.5	27.9	
9.0	26	7.7	59.6	
9.5		25.7	25.3	
9.3		29.4	20.0	
9.0		59.0	28.2	
9.4	27	18.0	28.4	
9.5		32.6	43.0	
9.2	28	11.8	27.5	K
9.5		25.3	58.5	
8.7		43.6	2.1	
9.1		52.5	23.2	K
9.5		57.4	32.2	
9.5	29	0.8	12.3	
8.9		34.1	24.1	K
9.5		53.2	21.6	B
9.5	30	17.9	35.1	
8.9		32.8	48.4	
8.6		44.0	36.9	K
8.5		48.0	22.7	K
9.5	32	27.0	43.0	B
9.5		38.5	50.9	
9.5		44.6	55.0	
7.7	34	30.5	40.2	K
9.3	35	8.6	39.9	
8.1		57.0	53.7	K
9.5	36	17.7	24.0	
9.5		54.2	28.1	
9.4	37	26.7	48.3	
9.5		26.8	56.7	
8.8	38	36.0	56.2	
8.8	39	0.7	17.3	K
6.4		1.6	22.1	K
8.2		7.5	4.8	K
9.5		39.8	4.5	
8.8		44.8	19.3	
9.0		46.6	30.8	
8.9	40	36.7	55.6	K
8.3	42	15.9	9.6	K
8.9		41.2	52.5	K
9.5	43	0.9	5.1	
8.8		5.6	37.3	K
9.5		24.3	24.6	
9.1		42.2	52.9	K
9.2	45	53.6	14.3	b

10pr.	+	−
	30.39	3.31

2481—2540

	12h—13h		+10°	
m	′	″	′	
9.2	46	32.5	52.7	b
9.3		49.7	57.2	
9.5		52.6	9.7	
9.2	47	32.6	6.6	K
8.9		39.8	44.7	
9.3	48	1.4	57.7	
8.2	49	18.5	6.0	K
9.3	50	3.1	12.8	
9.2		4.0	44.1	K
7.8		35.1	7.6	K
9.1		40.5	49.8	K
8.8	51	0.6	32.1	K
9.5		40.1	0.7	
9.0		56.2	56.7	K
9.3	52	3.0	2.0	
7.3		29.8	18.5	K
9.5		48.4	59.0	
9.5	53	3.3	41.2	
9.5		8.5	56.5	a
9.3		50.9	55.1	
8.7	54	10.3	54.9	
9.5	55	23.5	6.5	
9.4		43.8	38.2	a
9.4		45.4	19.0	
9.1	56	2.8	41.5	K
8.9		16.8	14.6	K
9.5		52.2	28.8	
9.5		54.3	18.3	
8.3	57	28.9	13.5	Lb
9.5		39.9	42.4	
9.3	0	0.5	26.5	
9.0		32.9	27.9	K
8.6	1	9.9	24.2	K
9.3		11.3	12.5	
9.4		44.5	33.2	B
6.7		57.4	48.4	K
9.5	2	0.7	36.1	
8.9		58.5	18.8	K
8.5	4	11.4	23.6	K
9.1		38.5	16.4	Kb
9.5	5	2.1	5.6	
9.3	6	31.5	53.8	
8.6		48.4	32.4	Lb
9.5		49.6	9.5	
9.4		57.0	19.3	K
9.5	7	0.4	43.4	
9.5		14.3	7.2	
9.5		33.2	30.6	
9.5	8	4.4	13.8	
9.0		47.0	26.3	
6.0	9	35.0	10.6	K
9.1		56.8	36.0	b
9.5	11	22.9	58.5	
8.9		35.0	36.5	L
8.6		59.1	13.4	
8.0	12	24.0	27.6	L
8.6		52.3	45.4	K
9.5	13	18.7	3.9	
8.9		31.5	47.4	
9.1		38.8	41.2	

10pr.	+	−
	30.10	3.24

2541—2600

	13h		+10°	
m	′	″	′	
8.9	13	44.5	3.6	K
9.5	16	17.4	19.4	b
9.5	18	7.9	22.5	
9.5		11.8	46.6	
9.5	19	33.1	14.2	aB
9.1	20	4.3	33.6	b
9.5		24.9	0.4	
7.7		55.7	12.7	L
9.5	21	59.1	3.2	
8.7	22	6.4	2.7	K
9.1		31.8	47.7	K
8.9	23	7.0	6.4	K
7.5		27.0	4.4	K
8.8		45.7	58.6	K
9.5	24	38.4	14.6	aB
8.1		58.2	54.4	K
9.2	25	5.0	14.2	aB
9.3		37.9	39.4	B
9.5		37.9	59.6	
9.3		53.4	43.8	
8.5	26	13.0	4.2	K
8.9	27	3.0	17.5	K
9.3		3.7	24.1	K
9.4		25.8	27.9	K
7.0	28	22.2	56.8	K
9.2		23.6	58.1	K
8.6	29	2.7	34.7	K
9.5		5.2	2.5	
9.5		42.9	2.0	
8.7		51.8	27.4	Kb
9.5	30	52.1	26.5	
9.0	31	23.8	52.5	
8.0		32.2	41.9	K
9.5		41.3	1.3	
8.4	32	0.9	7.3	Kb
9.5		41.8	8.6	
9.5		43.9	24.7	
9.5	34	22.2	19.7	
9.2		44.7	40.8	b
9.4		45.5	2.4	aB
9.5		52.6	4.2	B
9.5	35	21.7	7.6	
9.0	36	41.2	36.7	Kb
9.3		42.1	43.8	
9.5	37	2.0	1.3	
9.5		30.7	11.0	
9.5		43.8	3.0	
9.5		52.5	12.6	
9.5	38	21.1	18.7	
9.3		44.0	34.7	
9.3	39	15.8	8.3	
9.5	40	12.7	24.2	
8.7	41	22.3	52.7	K
8.8		35.0	52.5	K
8.0		42.0	25.6	K
8.7		51.0	48.8	K
9.3		54.2	19.5	B
9.5	42	56.7	23.8	
9.5	43	1.6	6.6	
7.0	44	43.6	51.5	Kb

10pr.	+	−
	29.77	3.09

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	13ᵐ—14ᵐ		+10°			14ᵐ		+10°			14ᵐ		+10°			14ᵐ—15ᵐ		+10°			15ᵐ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	46	7.6	6.6		9.3	9	43.8	57.7		8.8	33	9.6	24.8	K	9.5	55	54.6	37.1		9.5	16	39.2	10.4	
9.2		39.1	21.5	b	9.5	10	3.3	45.0		9.4		34.7	9.0		9.3	56	43.5	22.2		9.5		40.2	47.5	
8.2		47.8	50.9	K	9.5		45.8	1.0		8.9		49.6	39.7		9.2		56.7	29.1	b	8.7		45.1	57.7	K
8.2		48.5	57.7	K	9.1	11	42.9	35.5	K	9.1	34	33.3	40.4		9.2	57	17.4	50.8		9.5		57.9	8.2	
8.7	47	0.6	59.3	K	9.5		44.3	5.9		8.2		42.1	8.7	K	9.5		46.3	19.6		9.3	17	9.3	13.5	
9.3	48	19.0	13.9		8.8		46.2	26.5	K	9.3		48.0	21.4		9.3		51.9	47.8		9.3		35.7	27.5	
9.3		23.1	12.2		9.4	12	16.1	19.1		9.5	35	21.1	24.5		9.3	58	14.4	32.5		9.1		45.2	16.7	b
9.3	49	18.4	23.1		9.5		49.0	12.4		9.3		33.9	53.8		9.0		52.1	6.2	B	9.5		53.7	16.3	
9.5	50	5.0	17.2		9.5	13	25.2	12.3	a	8.6	36	2.3	52.3	Kb	8.0	0	13.6	52.2	K	9.5		58.3	14.6	
8.3	51	12.6	50.8	K	8.7	14	17.6	13.0	Kb	9.5		18.4	6.2		9.5		15.5	5.0		9.5	18	9.7	2.7	
8.7		31.2	0.8		9.5		23.6	2.3		9.2		23.1	6.2		9.0		26.1	24.5		9.5		39.8	13.2	
8.7		56.1	13.6	K	9.5		32.6	58.0		9.4		28.7	43.9		9.5		30.6	11.0		9.5	19	17.3	12.2	
9.3	52	0.8	28.0		9.5		32.6	42.8	K	9.5		54.5	52.7		9.0		49.2	55.8		7.0		31.8	32.8	K
9.1		6.1	38.3	b	9.5		53.5	26.5		8.9		57.3	39.9	B	9.5		49.8	1.7		8.0	20	17.0	12.8	K
9.2		57.5	5.7		8.9	15	9.8	41.5	K	9.5	37	2.0	47.7		8.2	1	6.1	54.7	K	9.5		21.2	40.5	
7.1	54	17.6	0.4	K	9.3		29.8	44.2	K	8.5		26.8	34.8	K	9.5		20.6	48.6		9.0		35.8	24.0	K
6.6	55	26.0	23.8	K	8.8		48.9	22.9	K	7.5	38	55.8	40.0	K	8.0		21.8	41.0	K	9.5	21	8.8	16.4	
8.6	56	12.4	15.4	K	9.5	16	9.8	4.9		9.4	39	4.1	47.3		8.0		39.5	39.4	K	9.1		15.6	59.1	B
9.2		16.5	5.0	aB	9.2	17	17.5	28.7	b	7.5		11.7	15.5	K	9.5	3	1.6	52.3		9.3		26.3	59.5	
9.5		55.5	48.3		9.2	18	34.4	23.4	b	9.3	40	12.2	47.5		9.3		2.0	36.2		9.4		29.2	56.0	B
9.5		56.1	34.3		9.5		36.2	31.3		9.4		17.6	34.3	B	8.9		42.0	11.6	K	9.5		40.7	38.3	
9.5	57	21.0	3.9		9.4		57.1	27.0		8.3		22.2	54.8	K	9.3	4	31.3	36.7		9.5		48.2	58.0	
9.5		29.7	27.6		9.5	19	29.9	18.9		9.5		22.5	1.0		7.8		39.3	41.3	K	8.7		55.9	53.4	K
8.8		52.7	12.0		9.5		32.1	38.1		9.5		33.8	52.0		7.1		49.2	46.0	K	9.0	22	12.0	27.7	L
8.6		57.7	42.4		7.4		56.9	39.0	K	9.5		46.1	48.8		7.3		53.3	20.0	K	9.5		59.6	5.0	
9.3	58	16.7	56.2		9.1	20	51.3	29.0	B	9.3	41	7.3	5.9	B	9.5	5	17.1	55.3		9.5	23	24.0	52.2	
9.4		33.5	10.6		9.4	21	5.5	38.8		8.5	42	14.5	49.7	K	9.5		34.4	49.4		9.3	24	43.1	17.3	
8.7		41.2	44.9	K	7.7		29.1	58.9	K	7.0		25.3	39.4	K	9.0		42.3	24.3		8.5		56.1	9.3	
9.5		43.8	43.5		9.5		30.4	2.1		7.5		39.6	48.5	K	9.5		54.5	53.0		9.5	25	9.8	58.9	B
8.4	59	3.6	35.7	K	8.5		54.0	12.5	K	8.9		46.1	54.4	K	8.3	6	3.2	7.1	K	9.5		19.7	6.2	
9.5		11.6	38.3		9.5	22	9.7	39.2		8.8	43	24.3	1.2	K	9.5		7.7	58.2		8.4		35.7	16.7	
9.5	0	24.7	52.2		8.3		23.0	2.4	K	7.6	44	2.1	19.4	K	9.5		44.8	7.4		9.5		52.0	4.6	
9.5		48.0	32.4		8.9		37.8	30.9	B	8.6		27.0	36.3	L	9.5	7	27.3	7.3		9.0		55.2	37.3	
9.5		57.7	8.4		9.5	23	3.0	5.3		9.2		43.5	14.3	B	9.0		34.4	51.4		9.5	26	5.2	9.4	
9.5	1	47.5	0.8		9.0		42.1	31.5		9.5	45	50.8	1.8		9.5		54.8	58.8		9.4	27	11.6	57.4	
9.0		59.5	21.3		9.0		44.2	7.2	Kb	9.4	46	4.6	28.3		7.1	8	37.0	39.1	K	9.5		22 8	21.6	
8.0	2	20.7	56.6	K	9.5	24	7.2	14.5		9.4		13.1	2.7	a	9.0	9	24.0	28.3	K	9.5		24.7	44.3	
8.0		32.2	56.9	K	9.5		20.3	46.5		9.0	47	8.8	6.9		7.0		35.7	14.5	K	9.5		34.3	27.4	
9.3	3	10.9	7.8	Kb	9.5		29.5	54.6		9.5		24.4	21.0		9.2		38.2	23.8		9.0	28	12.0	40.5	
9.3		54.8	30.2		9.4		32.7	26.6		9.5		27.0	49.7		9.0	11	15.0	21.2		9.5		16.3	36.0	
9.1	4	17.2	35.9	K	9.4	25	31.2	3.0		9.5	48	22.1	6.9		9.3		22.3	35.7		9.4		39.4	30.3	a
9.2		18.7	49.4	K	9.5	26	26.9	41.5		9.5		26.5	7.6		9.5		34.2	19.1		9.5	29	10.0	9.3	
9.5		42.5	10.4		8.4		28.4	0.5		9.5		56.5	30.2		6.8		45.8	57.6	Kb	9.5		26.4	4.9	
9.5		55.6	19.1		9.0	27	14.0	27.9	K	8.9	49	7.5	57.8		9.5	12	32.3	54.9		6.2		32.3	30.1	K
9.5	5	19.4	8.0		9.5		16.1	4.6		8.6		11.2	25.2	K	9.4		35.9	4.9		9.5	30	28.2	57.0	
9.5		19.5	14.4		9.2		36.8	48.6	a	9.5	50	5.8	46.7		9.4		37.2	23.5		7.3	31	0.4	44.5	K
9.5		25.0	15.6		7.9		52.4	32.8	K	9.5		40.3	50.5		9.5		40.5	31.1		8.9	32	28.9	26.7	K
9.4		40.5	42.4		8.8		53.8	47.7		8.8	51	19.7	37.1		9.5	13	25.3	14.2		9.3		40.7	27.8	
8.7		46.3	32.4	K	9.2	28	5.3	15.1		7.9		29.2	5.2	K	9.5	14	6.2	41.2		9.5	33	11.9	15.7	
9.3	6	52.9	19.8		7.3		55.7	23.5	K	8.4		53.5	56.4	K	9.0		8.8	34.7	K	9.5		37.7	29.9	
9.5	7	2.5	15.9		9.4	29	7.6	14.4		9.4	52	24.2	55.3		9.5		17.0	7.5		9.5	34	2.7	30.2	
9.3		30.8	48.1	K	9.5	30	10.6	7.7	aB	9.1	53	21.4	30.8	b	9.5		27.7	13.2		8.9	35	8.6	45.9	
9.5		34.4	33.1		9.1		28.8	27.5	b	9.2		28.9	17.7		9.1	15	6.3	16.2		8.1		18.4	7.1	K
5.3		45.9	47.5	K	9.2	31	14.7	35.9		9.1		30.0	13.1	a	9.3		45.7	54.8	B	9.5		20.0	31.3	
9.4		58.9	36.9		9.3		40.9	1.6		9.5	54	5.4	9.9		8.5		49.2	7.0	K	9.4		24.2	27.2	
8.5	8	0.4	7.6	K	9.5		46.8	41.8		8.1		26.3	56.4	K	8.5		50.3	26.7		9.4		46.5	50.5	
8.7		43.7	59.4	K	9.4		51.5	27.2		9.3	55	25.5	26.6		9.5		52.5	57.5		9.5	36	30.0	10.8	
9.5	9	8.6	32.5		9.0	32	24.7	47.3	Kb	8.7		32.1	58.2	K	9.4		56.8	55.1		9.5		30.7	38.3	
9.5		9.0	52.1		9.3		28.3	47.7		9.5		48.6	11.8		9.3	16	16.8	57.3		9.3	37	26.5	47.7	
9.3		23.6	37.7		8.4	33	7.7	30.6	K	8.5		53.9	4.7	K	9.2		28.0	58.6	K	9.5		28.0	17.1	
		+	−				+	−				+	−				+	−				+	−	
10pr.		29.48	2.90		10pr.		29.28	2.72		10pr.		29.11	2.53		10pr.		28.92	2.30		10pr.		28.78	2.09	

2901—2960

	15ᵉ—16ᵉ	+10°	
m	′ ″	′	
9.5	38 54.2	44.2	
9.3	39 16.9	16.3	α
9.4	40.2	8.8	
7.4	46.5	14.6	K
9.5	40 3.9	24.5	
9.2	11.7	52.3	
9.5	19.5	39.4	
8.7	24.8	56.1	K
8.5	42 17.6	37.2	Kb
8.8	18.4	3.9	
8.1	24.6	31.6	K
8.7	48.9	22.6	K
9.2	43 18.8	19.8	
8.4	44 28.4	25.0	K
8.6	29.9	58.8	K
9.5	46 2.2	7.3	
8.4	34.1	46.6	Kb
9.3	53.2	12.4	
9.3	47 4.1	16.3	B
9.5	19.3	4.3	
9.5	37.9	54.6	
9.5	48 1.8	32.5	
9.1	9.7	45.1	
9.0	25.8	3.7	
8.6	34.2	31.9	K
9.5	49 15.3	5.0	
7.8	16.7	44.4	K
9.1	35.4	23.9	B
8.9	37.4	32.9	K
9.5	46.6	52.7	
9.0	50 16.0	29.9	K
8.9	50.3	30.1	K
8.9	58.3	23.5	K
9.2	51 18.8	57.6	α
8.5	52 35.7	54.0	K
9.4	37.8	59.1	
9.5	53 3.5	53.3	
9.1	14.3	13.5	ab
9.2	54 1.6	53.0	
9.3	43.4	48.9	
9.5	55 2.8	19.6	
9.3	12.5	14.2	
9.2	24.4	1.0	αBb
9.4	27.0	0.8	αB
9.3	50.4	13.6	
9.4	56.3	14.0	
9.5	56 32.9	24.1	
9.2	48.6	8.3	
8.7	57 6.4	24.2	K
8.1	13.2	24.5	K
9.5	49.7	38.2	
8.0	53.6	3.0	K
9.4	58 8.3	52.8	
9.4	44.3	21.1	K
7.5	57.6	20.5	Kb
var	0 21.1	19.5	α
9.1	37.9	42.9	
6.2	43.4	17.0	K
7.3	1 12.0	28.8	K
9.1	30.1	22.6	K
10pr.	+ 28.63	— 1.80	

2961—3020

	16ᵉ	+10°		
m	′ ″	′		
9.4	1 38.9	23.6	B	
9.5	48.3	53.1		
*9.3	2 6.1	2.0		
9.2	42.8	37.4		
9.5	47.8	3.9		
8.5	50.3	50.6	K	
9.5	3 40.0	7.6		
7.2	48.8	25.3	K	
9.5	59.8	6.4		
9.5	4 18.6	35.8		
7.0	33.7	5.3	K	
9.5	36.1	19.3		
9.1	44.6	15.0	K	
8.5	5 1.4	11.4	K	
9.5	6 15.2	55.6		
8.8	7 5.6	36.8		
9.3	43.9	27.5		
8.8	8 1.7	44.2	K	
9.4	27.9	21.7	B	
9.0	56.2	24.5		
9.5	9 12.7	27.2		
8.3	35.4	38.0	B	
8.1	10 55.9	39.5	Kb	
9.3	11 22.6	16.7	B	
9.4	53.1	13.7	αB	
9.2	54.2	39.5	B	
9.5	57.7	28.5		
9.5	12 0.7	43.5		
9.2	48.4	4.6	K	
8.5	59.1	9.9	K	
9.3	13 33.4	10.3		
8.5	15 30.5	15.0	K	
9.4	16 9.7	46.7	B	
9.5	10.3	15.0	αB	
8.6	28.0	21.0	K	
7.2	17 32.0	35.6	K	
9.1	34.9	27.5		
9.5	18 9.3	3.9		
9.0	14.9	58.2	K	
9.3	16.6	17.0		
9.5	19 6.3	22.1		
8.4	25.4	49.3	B	
9.3	46.7	49.9	B	
8.5	20 30.9	16.4	K	
9.5	33.2	55.8		
9.5	36.6	0.1		
9.5	44.6	0.1		
9.5	21 37.4	4.0		
9.5	22 9.7	8.6	αB	
8.9	22.8	33.7	K	
9.1	23.0	44.7		
7.8	33.6	54.8	K	
9.5	39.3	6.0		
9.2	23 9.7	46.8		
9.3	12.5	42.3	B	
9.5	13.2	27.4		
8.8	43.8	2.4	Kb	
9.2	24 31.8	39.9		
9.4	48.8	6.6		
9.4	25 6.2	47.3		
10pr.	+ 28.50	— 1.50		

3021—3080

	16ᵉ	+10°	
m	′ ″	′	
9.2	25 37.9	56.4	
9.1	47.4	6.1	ab
8.8	26 7.6	45.7	K
9.3	10.7	46.1	B
7.0	42.4	40.7	K
9.3	50.8	24.2	
9.2	27 3.9	36.1	B
9.3	28 4.5	46.4	
9.4	13.5	9.8	αB
9.5	15.4	0.5	
9.5	28.4	35.1	
9.5	48.1	14.3	
9.5	29 4.2	14.7	
8.7	7.1	52.3	K
9.5	22.3	8.6	
9.3	39.9	27.2	b
9.4	30 1.1	39.8	
9.5	31 24.1	46.7	
9.0	47.5	16.0	
9.3	32 3.8	30.2	
9.5	6.0	50.1	B
9.4	22.8	34.3	
8.5	39.7	34.6	
9.5	33 13.8	28.1	
9.2	17.6	7.5	
9.5	32.8	37.4	
9.4	35.1	25.7	
9.5	52.1	31.1	
9.4	34 24.3	53.8	
9.5	40.6	6.3	
9.3	44.8	30.1	b
9.5	35 59.7	12.5	
9.5	36 15.2	52.0	
9.5	28.8	28.8	
8.5	44.3	45.0	Kb
9.5	57.8	35.8	
9.3	37 45.0	25.7	
8.1	58.1	13.6	S
9.2	38 10.4	50.0	
9.5	33.1	26.7	
9.5	34.0	7.8	
9.5	39 7.8	45.8	
9.3	36.7	44.9	
9.2	37.9	48.6	b
9.0	46.0	4.9	K
9.5	47.3	9.8	
9.5	40 6.9	50.5	
9.5	17.1	33.7	
9.1	24.8	36.0	b
9.5	34.6	53.2	
9.1	52.9	42.7	
9.4	41 24.0	32.0	
8.5	26.8	40.0	
9.0	30.9	17.7	B
8.1	37.5	0.9	L
9.5	49.4	51.6	
9.4	54.5	29.0	B
9.0	57.5	12.5	
9.4	42 3.2	21.8	B
9.0	48.9	55.7	K
10pr.	+ 28.41	— 1.21	

3081—3140

	16ᵉ	+10°	
m	′ ″	′	
9.0	43 12.5	21.6	K
9.5	52.1	45.4	
7.3	44 10.2	7.7	K
9.2	45 5.1	19.2	
8.7	8.7	38.1	
9.0	44.1	42.2	K
9.5	48.3	12.2	
9.4	46 48.2	26.3	
9.4	54.9	52.0	
9.5	58.1	58.2	
9.5	47 6.6	54.3	
4.1	8.6	24.8	Kb
9.3	20.4	0.3	
9.5	46.7	3.4	
8.5	48 1.9	16.6	K
9.5	12.2	23.7	
9.5	37.2	28.6	
9.5	49 35.6	46.0	
8.8	41.7	28.6	K
9.5	54.2	8.8	αB
9.3	50 12.5	36.3	
8.2	23.0	45.9	K
9.5	45.8	13.4	
9.2	58.5	11.1	
9.0	51 4.6	34.6	K
9.5	10.8	38.3	
9.2	20.6	32.3	
9.1	22.9	34.5	
9.5	52 12.0	46.4	
9.3	20.4	29.0	
9.5	51.3	6.0	
9.0	53 1.7	45.8	
9.4	6.4	15.4	
7.7	8.1	0.7	K
8.5	18.9	3.2	K
9.4	54 7.0	27.6	B
9.2	7.8	40.2	b
9.4	17.6	30.0	
9.5	22.7	25.0	
9.5	27.0	0.7	
9.5	36.5	9.9	αB
9.3	41.8	1.7	B
9.3	55 12.6	23.0	
9.5	26.7	9.4	
9.5	29.8	43.6	
7.2	39.4	2.1	Lb
8.2	47.5	45.1	B
9.5	56 7.6	13.3	
9.4	20.1	19.6	
9.5	45.6	0.2	
9.4	47.2	59.1	
9.5	55.1	0.2	
9.4	57 3.6	15.3	
9.5	21.5	53.0	
9.0	28.4	44.6	K
9.5	33.3	39.1	
8.9	58.7	26.8	K
9.4	58 11.2	56.6	
9.4	29.5	30.0	B
8.2	42.7	44.4	Lb
10pr.	+ 28.35	— 0.98	

3141—3200

	16ᵉ→17ᵉ	+10°	
m	′ ″	′	
9.5	58 43.0	25.3	
6.8	59 22.1	39.2	L
9.3	58.4	14.5	
9.2	1 9.2	45.7	
8.5	11.4	30.3	K
9.5	37.4	12.1	αB
9.4	43.0	1.9	α
9.4	49.5	17.3	
9.5	2 1.0	20.5	
9.0	10.9	2.6	L
9.1	13.5	29.2	
8.7	43.9	26.0	K
7.5	49.9	13.7	K
9.5	3 11.7	3.9	αB
9.3	16.2	23.3	
9.5	29.1	36.7	
9.2	43.6	46.0	
9.2	51.2	50.9	
9.5	55.4	23.3	
*9.4	56.6	15.4	B
9.3	4 38.3	49.0	
9.1	56.5	37.9	
9.5	5 1.7	54.6	
9.4	31.7	44.9	B
5.8	37.6	46.6	L
9.4	46.0	35.3	
9.3	7 49.9	50.3	B
9.5	52.3	2.2	
8.7	58.1	9.5	K
9.0	59.0	53.6	K
9.2	8 28.0	2.7	αB
9.2	53.6	6.0	
9.5	9 38.5	22.4	
8.6	42.9	34.3	K
8.5	54.5	21.1	
9.2	10 41.1	37.6	K
8.5	44.5	35.8	K
9.4	45.7	45.6	
9.2	47.4	50.9	
9.2	49.4	53.4	
9.1	50.3	40.0	B
9.5	50.3	42.8	
9.5	11 15.8	9.2	B
9.0	59.0	0.1	
9.0	12 2.5	56.4	
9.3	3.4	44.8	
8.9	3.9	36.0	K
8.5	21.2	7.7	K
9.0	23.4	14.5	K
9.2	53.8	58.6	B
9.3	13 9.7	51.7	B
9.2	14.9	51.7	B
9.5	21.6	1.0	
9.5	14 4.1	35.7	
9.5	15.8	13.7	
9.5	41.0	53.6	
9.4	15 23.2	53.6	
9.2	28.5	20.7	
7.7	37.1	20.6	P
9.5	38.3	35.9	
10pr.	+ 28.31	— 0.75	

2962ᵉ
9.6 | 1 59.0 | 23.4 | B

3160ᵉ
9.6 | 4 38.5 | 2.9 | B

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	17ʰ		+10°			17ʰ		+10°			17ʰ		+10°			17ʰ—18ʰ		+10°			18ʰ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	15	49.2	40.2		9.4	32	54.8	11.0		9.3	47	47.6	14.1	αB	8.8	58	40.6	27.4	K	9.4	7	50.3	59.3	
9.4	16	9.2	58.1		9.5	33	6.5	3.3		9.5		58.2	58.7		9.4		51.5	9.0	α	9.5	8	4.2	4.0	
9.2	17	47.4	16.3	b	9.4		13.3	44.0	B	9.0	48	1.1	45.4	K	9.5	59	2.0	9.7	αB	9.5		5.7	23.4	
9.4		53.8	55.5		9.5		18.8	57.6		9.1		5.8	10.3	α	9.5		3.0	31.4		9.5		6.6	47.7	
9.5		54.3	59.3		9.5	34	7.8	37.4	B	9.3		10.3	45.3	Kb	8.9		5.6	25.9	K	9.5		19.4	0.1	
9.5	18	6.9	24.7		9.5		14.0	38.8		9.0		14.0	36.7	K	9.0		23.6	23.7	K	8.4		30.0	14.2	
9.4		23.1	38.7		9.0		55.7	44.4		9.2		22.1	34.4	n	9.5		41.4	8.6		9.5	9	6.0	53.3	
9.3		47.7	46.3	α	9.0		59.1	39.2		9.5		28.1	14.1		9.5		48.5	5.1		9.5		12.3	20.0	
9.1	19	34.6	46.3	α	8.2	35	10.5	43.0	Lb	8.6		49.0	41.8	K	9.4		50.3	52.7	B	9.5		14.1	6.8	
9.5	20	15.4	52.2		9.1		27.3	30.3		9.5	49	9.4	9.2	αB	9.3		52.0	14.2		9.2		23.7	41.2	
9.5		25.7	25.7		9.5	36	1.4	9.1		9.5		49.3	30.4		9.1	0	1.3	11.8	α	9.5		26.4	1.6	
8.3		39.3	45.7	K	8.5		17.0	25.9	K	9.0		50.3	25.6	K	9.5		36.4	52.8		8.0		34.2	46.6	K
9.5	21	46.2	12.4		8.9		29.6	53.0		9.5	50	6.7	32.2		9.5	1	7.3	46.2	α	9.5		34.8	56.3	
9.3		51.4	29.6		9.5		32.6	3.4		9.1		13.4	45.3	K	9.5		13.0	22.7		9.3		36.6	37.0	
9.0		53.0	36.7	K	9.5		42.8	6.4		9.5		17.5	2.2		9.3		24.6	58.0	K	8.7		38.5	24.0	K
7.2		57.5	39.8	K	9.1		51.7	18.7		9.4		34.3	16.4		9.5		29.0	10.0		9.5		44.2	46.8	
9.3	22	29.3	11.8	αB	8.6		53.7	10.0	L	8.1		39.6	58.4	K	9.5		34.4	33.5		9.2		48.0	13.5	
9.1		32.1	26.9		9.1	37	10.0	22.0		9.3		40.4	12.7	α	9.5		42.6	13.1		9.2		50.0	34.4	K
8.5		51.1	28.9	Kb	9.0		15.4	42.8	K	9.5	51	6.9	9.6		9.5		45.5	10.0		9.4		50 8	14.3	
9.0	23	8.4	14.7		8.7		19.9	52.5	K	9.1		21.6	57.1	K	9.4		50.6	26.7		9.3		51.3	44.3	
8.9		18.9	26.9		9.2		23.3	3.8		7.8		24.6	12.1	L	9.5		56.5	13.4		9.5	10	19.2	9.8	
7.5		33.1	53.1	L	9.5		34.8	26.2		8.8		47.3	55.4	K	9.5	2	3.7	55.1		9.5		26.3	43.3	
9.5		52.8	38.4		9.5		51.9	23.1		9.1	52	15.0	25.2	K	9.5		11.0	9.1		9.5		57.5	47.7	
9.5	24	15.0	56.9		9.5	38	29.0	50.6		9.5		31.7	4.8		9.5		21.8	7.4		9.5		59.8	52.9	
9.2		16.7	33.2	S	9.2		44.5	5.0		9.5		35.3	48.7		8.5		25.2	35.2		9.5	11	7.0	8.7	
9.4		17.0	40.9		9.4		57.1	6 7		9.3		36.3	57.0		9.5		28.4	34.8		9.5		27.0	55.3	
9.2		21.8	33.4	α	9.2	39	0.5	58.0	K	8.9		48.6	16.2	K	8.8		48.5	38.4		8.5		28.1	31.2	K
8.7		43.3	34.3	K	9.2		0.8	24.5	B	9.5	53	0.3	30.7		9.5		51.0	4.2		9.5		39 4	22.6	
8.7		58.0	46.8	L	9.4		5.1	53.0		9.4		1.5	47.6		9.5		54.0	57.0		8.9		44.5	35.1	K
9.4	25	13.2	29.6		9.2		20.3	35.3		9.3		8.7	56.6		9.2		54.4	55.2		9.5		51.6	24.6	
8.1		15.6	30.0	K	9.0		24.0	22.2		8.7		23.3	31.4		9.4		58.0	3.6		9.4		52.0	52.6	
9.5		18.2	32.6		9.5		46.2	25.3		9.5		41.0	35.5		8.8	3	2.3	45.0		9.5	12	9.0	32.3	
9.5		21.9	12.1		9.4		55.4	52.1		9.5		43.7	9.6		9.5		10.7	38.0		7.8		49.9	12.9	K
9.1		39.1	31.2	K	8.9		57.6	8.6	K	9.5		48.2	33.5		9.0		16.2	2.6	K	9.1		52.2	38.8	b
9.5		43.9	7.3		8.7		59.1	11.1	K	8.5		59.7	29.3		9.3		28.0	23.4		9.0	13	0.3	6.5	K
9.5		48.3	26.1		8.7	40	1.0	51.1	B	9.2	54	8.0	26.2		8.8		40.4	33.4		9.5		3.7	55.1	
9.5	26	10.2	27.6		9.5		12.5	1.9		9.4		8.7	34.9		9.5		42.1	51.2		9.5		21.6	16.2	
8.9		11.0	1.8		9.5		16.1	33.4		9.4		15.4	1.3		9.5		52.8	51.3		9.5		29.5	29.2	
8.2		24.4	42.8	K	9.3		40.5	26.9		9.5		38.0	3.0		9.5	4	1.1	59.6		7.4		45.0	2.6	K
8.7		34.1	59.9	K	9.5		49.6	40.2		9.3		41.3	16 5		9.5		14.2	42.8		9.0		46.6	50.2	
9.4		58.8	49.9	B	9.5	41	17.4	43.9		9.5		44.1	45.2		9.4		23.4	42.5		9.1	14	19.3	52.8	
9.4	27	1.2	57.2	B	9.5		17.8	7.1		9.5		45.8	52.8		9.4		31.6	10.1		9.5		19.3	54.3	
9.5		33.7	10.5		9.5		30.2	59.3		9.5	55	5.3	31.4	B	9.5		40.2	17.4		9.4		28.4	9.3	
9.5		42.4	54.7		9.5		41.6	33.3		8.1		23.5	2.4	K	9.5		45.4	54.7		9.4		52.5	10.3	
9.5		55.7	9.1		8.6	42	33.2	22.8	K	9.3		35.2	50.4	K	8.8	5	17.1	1.7		9.4		53.2	6.4	
8.5	28	1.1	21.8		9.3		54.0	55.4		9.3		44.7	29.3		9.4		32.8	39.5		9.4	15	4.4	56.4	
9.1		14.5	1.1	α	9.3	43	5.5	59.9		9.5		45.3	35.6		9.5		46.6	19.9		9.5		17.9	26.0	
9.3	29	19.8	23.1	B	9.3	44	8.0	10.8	αB	9.5		46.5	42.1		9.5		49.3	12.1		9.5		38.6	30.0	
9.0		31.7	5.3	K	9.0		23.2	38.9		9.4	56	12.0	29.0		8.3		58.4	2.1	K	9.5		39.5	57.5	
8.0	30	2.5	40.4	K	9.5		57.6	33.2		9.5		28.8	27.4		9.1		59.1	4.7	α	9.5		58.9	44.7	
8.2		4.1	8.2	K	9.1	45	33.1	4.1	K	9.5		29.9	5.4		9.3	6	4.0	25.6		9.5	16	10.4	23.1	
9.2		14.0	1.1		9.0	46	13.3	33.0		9.5		30.5	23.9	B	9.0		9.3	3.5		9.2		23.9	39.4	b
9.5		53.4	13.7		9.3		30.7	41.6		8.1		38.7	17.6	Kb	9.5		16.8	58.7		9.5		25.8	21.2	
8.8	31	6.8	19.6		9.0		33.2	56.6		9.3		44.4	55.6	B	9.1		21.7	50.8		9.3	17	0.1	37.3	
9.5		11.3	28.0		8.5		35 6	59.6	K	9.0	57	5.0	39.7	K	9.4		42.8	57.7		8.8		8.2	48.6	K
9.5		20.0	35.0		9.5		50.4	37.1	B	8.6		35.9	53.5	K	9.5		43.4	24.6		7.8		9.7	28.8	B
8.7		40.8	15.6	K	9.3		56.9	49.1		9.3	58	20.5	7.0		9.2		47.2	16.4	b	9.3		13.0	56.1	B
9.5		43.7	32.3		9.3	47	4.0	47.7		9.5		22.8	39.4		7.5		50.9	47.4	K	7.3		20.6	53.1	K
9.3		50.5	12.0	αB	9.4		8.2	50.4		9.4		28.1	27.7	αB	9.5		58.6	34.8		9.5		36.2	47.3	
8.7		55.1	47.5	K	9.5		29.3	3.6		9.1		32.0	13.4	α	9.4	7	35.5	57.4		9.4		38.0	58.6	
		+	—				+	—				+	—				+	+				+	+	
10pr.		28.27	0.51		10pr.		28.25	0.30		10pr.		28.24	0.10		10pr.		28.24	0.04		10pr.		28.24	0.18	

3501 — 3560

	18ᵃ	+10°	
m	′ ″	′	
9.5	17 42.3	37.0	
9.4	45.1	42.6	
9.4	46.3	13.2	
8.0	49.5	6.5	L
9.3	18 19.6	46.6	*b*
9.4	20.4	55.6	
9.5	34.3	3.4	
9.3	47.3	3.2	
8.4	19 4.5	3.5	K
9.5	5.9	16.5	
9.3	36.1	51.1	
8.4	43.0	19.0	
8.9	48.6	1.0	K
9.5	59.4	41.0	
9.5	59.7	8.6	
9.5	20 4.6	52.5	
9.5	18.3	9.8	
9.5	22.9	27.5	
9.4	27.7	48.2	
9.3	32.8	16.2	
9.5	49.7	15.1	
9.5	49.7	8.6	
9.4	58.4	40.0	
9.5	21 17.7	42.1	
8.6	22 4.0	6.7	
8.5	5.2	53.1	K
9.5	16.9	35.6	
8.2	25.4	48.2	L
9.5	26.5	59.1	
9.5	35.7	51.4	
9.3	55.1	22.0	
6.8	23 7.1	23.3	B
9.3	37.9	11.0	
9.4	41.8	32.3	
9.5	46.0	23.4	
9.3	46.5	38.3	*a*
9.5	47.6	45.8	
9.5	24 3.8	19.9	
9.5	13.9	14.8	
9.5	28.1	58.8	
9.5	35.0	42.5	
9.0	41.7	18.1	
9.5	49.2	54.1	
8.4	57.5	38.1	
9.1	25 1.0	25.8	
9.5	4.9	56.2	
9.3	13.7	38.3	
9.5	26.5	52.5	
9.4	31.8	19.3	
9.5	34.4	26.6	B
9.5	47.3	12.0	
9.5	52.1	50.5	
9.4	57.2	48.1	
9.5	26 17.4	24.7	
9.5	19.3	44.2	
9.5	21.6	6.9	
9.5	41.7	33.8	
9.3	41.8	1.9	
9.4	43.3	15.9	
9.2	44.1	42.2	K
10pr.	+ 28.25	+ 0.33	

3561 — 3620

	18ᵃ	+10°	
m	′ ″	′	
9.4	26 46.9	17.1	
9.2	51.0	20.5	K
9.5	58.0	28.9	
8.3	58.7	19.7	K*b*
9.3	27 3.9	2.2	
9.5	6.7	43.2	
9.5	15.2	51.9	
8.7	18.4	15.0	K
9.5	21.7	10.0	
8.8	31.3	23.5	K
9.0	31.5	54.0	K
9.5	39.1	52.4	
6.7	58.9	47.2	K*b*
9.5	28 3.4	18.0	
9.5	4.9	11.3	
9.5	14.0	2.4	
9.5	45.7	40.5	
9.5	52.0	39.1	
9.5	29 4.2	51.6	
9.0	35.3	10.1	
9.5	35.6	45.4	
9.5	39.0	17.4	
9.5	41.9	1.7	
9.0	42.6	40.5	
9.0	50.5	59.3	
8.8	30 0.5	27.1	
9.2	2.8	44.1	
9.0	9.4	8.8	
9.4	12.7	55.2	
9.5	16.4	48.9	
9.5	22.1	51.6	B
9.3	24.6	15.8	
9.2	30.8	29.3	*a*
9.3	33.4	15.2	
9.4	56.3	21.7	
9.3	31 3.8	53.6	
9.2	10.1	8.5	
9.3	10.4	58.6	
8.6	22.0	25.4	K
9.1	28.7	38.6	*b*
9.5	35.1	0.4	
9.3	42.8	8.4	
9.1	47.7	17.4	K
9.5	53.2	17.9	
9.5	32 0.7	34.0	B
9.5	11.3	5.8	
9.5	12.5	20.2	
7.9	17.2	54.0	L
9.5	23.7	57.5	
9.3	31.8	18.5	
9.3	35.7	31.4	
9.4	43.0	25.2	
9.4	45.1	23.6	
9.5	33 2.8	30.6	
9.0	12.5	59.0	K*b*
9.5	43.4	46.7	
7.5	53.1	49.8	K
9.4	34 0.3	55.2	
9.5	12.3	37.7	
9.5	16.4	11.7	
10pr.	+ 28.26	+ 0.44	

3621 — 3680

	18ᵃ	+10°	
m	′ ″	′	
9.4	34 27.7	42.4	
8.9	50.5	28.6	K
9.3	35 1.2	49.8	
9.5	24.6	25.9	
9.5	40.7	1.3	
9.5	36 19.5	34.9	
9.3	33.6	46.1	
9.0	34.4	55.2	
9.5	37.7	7.5	
9.3	43.7	7.7	
8.7	54.0	19.5	
9.5	37 0.3	33.7	
6.8	2.3	45.6	B
8.8	19.4	41.9	
9.5	21.0	55.3	
9.5	34.7	7.9	
9.5	50.9	47.9	
8.6	57.3	59.9	K
9.1	38 7.1	51.5	
9.4	15.8	47.7	
9.5	22.2	22.4	
9.4	26.4	52.5	
9.4	38.9	40.2	
9.4	43.3	31.4	
9.5	57.3	2.1	*a*B
9.5	39 10.2	14.0	
9.5	17.3	9.8	
9.3	21.2	35.2	
9.0	46.4	38.4	
9.3	52.5	46.1	
9.5	40 4.1	13.4	
9.4	6.7	58.9	
9.5	18.3	59.0	
9.5	18.7	49.6	
8.2	20.7	36.6	*B*
9.1	21.1	4.8	*a*
9.5	39.9	16.4	
9.3	55.1	28.7	
9.5	56.0	11.7	*a*
8.0	41 8.4	58.8	L
9.2	11.3	55.7	B
8.7	11.4	13.3	
8.1	22.9	29.2	L
9.5	28.8	10.1	
8.1	37.9	36.3	K
9.4	40.9	37.7	
8.6	43.4	1.3	
9.3	48.7	19.2	
9.5	42 4.9	51.0	
9.5	8.4	58.6	
9.3	9.1	25.9	
9.5	16.3	19.1	
9.5	30.6	18.8	
9.5	31.3	6.1	
7.5	53.3	21.8	K
9.0	54.2	3.0	
8.2	54.5	30.6	K
8.4	43 10.2	26.9	K*b*
9.5	11.9	9.8	
9.1	17.0	27.0	
10pr.	+ 28.28	+ 0.58	

3681 — 3740

	18ᵃ	+10°	
m	′ ″	′	
9.3	43 24.4	24.8	
9.3	49.5	16.0	
9.0	51.6	28.7	
9.5	54.8	57.8	
6.7	56.3	48.8	K
9.5	58.4	23.3	
9.0	44 5.9	43.7	
9.5	6.9	51.2	
9.5	7.0	7.9	
9.3	11.8	17.1	R
9.5	15.6	8.6	
9.5	17.8	12.0	
9.4	19.4	14.4	
9.3	19.4	7.6	*a*
9.5	19.8	58.2	
9.5	26.5	12.3	
9.3	40.6	8.6	
9.3	40.9	8.9	
9.0	45.4	8.8	
9.5	46.0	57.5	
9.4	55.5	40.2	
9.4	56.8	28.5	
8.3	45 8.2	36.5	K*b*
9.4	35.5	57.8	
9.4	41.6	31.0	
8.2	55.5	4.4	K
9.5	46 8.3	47.3	
9.3	17.7	24.8	
8.1	22.0	0.3	K
9.3	23.3	20.0	
9.5	25.0	27.6	
9.5	46.6	57.5	
9.5	48.1	27.0	
9.5	56.8	16.4	
9.1	58.0	9.8	*ab*
9.5	47 5.1	51.3	
9.5	11.4	2.1	
9.0	12.2	43.5	
9.5	31.8	52.3	
7.0	32.0	37.8	B
8.0	38.6	27.3	B
9.4	50.8	47.3	
9.5	58.8	52.3	
9.2	48 3.5	47.7	
9.5	11.8	18.0	
9.3	22.3	55.9	
8.8	37.1	33.3	
9.3	43.6	7.5	
9.5	55.3	43.7	
9.5	49 0.0	29.6	
9.5	1.5	29.0	
9.5	4.8	26.7	
9.5	9.0	15.4	
9.5	9.5	38.2	
9.4	17.9	33.8	
9.5	20.9	24.0	
9.5	35.3	8.0	
9.1	50 1.4	38.5	
9.4	3.4	49.6	B
9.5	5.6	18.4	
10pr.	+ 28.29	+ 0.67	

3741 — 3800

	18ᵃ—19ᵘ	+10°	
m	′ ″	′	
8.8	50 25.1	25.7	
9.5	40.4	9.1	
9.5	51.7	41.5	
9.5	53.5	28.8	
9.5	51 11.0	14.4	
9.5	42.0	31.7	
9.5	46.0	28.4	
9.5	52 5.6	28.5	
9.3	17.0	45.8	
9.5	27.4	8.9	
9.5	42.8	57.0	
9.1	50.2	55.2	K*b*
9.5	53.7	52.4	
9.1	53 7.4	11.6	*ab*
9.5	29.9	54.2	
9.5	30.7	13.1	
9.3	45.1	53.7	B
9.5	54 11.4	16.0	
9.5	53.7	2.7	
9.2	55 12.1	20.6	
8.8	12.4	33.2	B
7.6	23.6	45.6	K
9.3	23.9	22.9	
9.5	24.0	2.7	
9.5	26.3	53.8	
9.3	28.9	23.2	
9.5	56.5	22.5	
8.3	56 6.2	15.0	
8.5	41.6	19.5	
9.5	42.5	30.9	
9.5	53.8	50.2	
9.5	56.7	12.0	
8.0	57 3.8	38.8	B
8.7	18.9	53.8	L
9.3	22.9	1.4	
9.4	43.4	13.8	*a*
9.5	48.2	42.9	
9.5	55.6	56.7	
9.5	58 6.8	53.0	
9.1	9.5	35.0	K
9.5	15.5	30.4	
9.0	18.5	12.2	K
8.7	23.2	36.5	K
8.5	59 4.9	59.1	K
8.8	32.6	7.7	
9.5	0 3.0	5.9	
var	9.3	51.2	K*b*
9.5	28.5	13.0	
9.5	36.8	31.5	
9.5	54.2	6.6	
9.5	1 15.0	22.1	
9.5	16.2	18.2	
9.1	18.8	12.4	*a*
8.3	31.2	9.1	L
9.4	46.2	26.3	
9.2	47.7	10.3	*a*
9.2	58.9	21.4	
9.4	2 6.5	28.4	
9.4	11.6	52.6	*a*
8.5	24.7	19.2	
10pr.	+ 28.32	+ 0.82	

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	19ᵐ		+10°			19ᵐ		+10°			19ᵐ		+10°			19ᵐ		+10°			19ᵐ		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
7.2	2	29.7	0.5	K	9.2	12	49.3	31.2		9.5	22	50.4	47.1		6.8	29	17.7	49.8	L	9.3	39	9.6	2.5	
8.5		31.6	56.8		9.5		50.3	17.8		9.0	23	6.9	31.0	K	9.3		28.8	30.8		9.4		12.5	59.1	
7.5		44.0	53.2	K	8.1	13	6.6	49.7	B	9.5		7.5	4.2		8.5		59.4	3.6	K	3.0		22.0	15.9	K
8.9		48.8	50.5		8.4		21.3	10.5		9.2		12.3	52.0		6.1	30	1.9	57.4	K	9.5		32.5	59.0	
9.5		59.7	59.9		9.0		21.7	25.4	B	9.5		19.7	5.8		9.3		2.3	28.8		9.0		41.5	3.0	
9.5	3	9.9	2.2		8.0		51.2	23.3	B	8.9		25.3	47.4		9.5		15.2	38.0		8.3		42.0	6.8	K
9.0		10.5	39.7		8.7		59.1	38.4		9.3		34.0	7.0	*a*	9.0		20.1	17.2		8.5		44.0	8.2	K
8.5		22.3	39.8	K	9.5	14	13.2	23.3		9.4		50.8	47.8	B	9.4		28.0	57.7		9.0		47.4	43.2	
9.3		38.0	58.6		8.9		42.8	33.6	K	9.5		58.8	53.2	B	9.3		35.2	37.9		9.5	40	9.3	59.7	
9.5		40.9	40.2		8.5		45.6	10.9		9.5	24	24.0	59.1		9.1		43.2	3.8	K	9.4		35.8	52.8	
9.5		49.1	51.8		9.4		46.6	32.3		8.0		31.7	52.2	K	9.5		43.2	11.2		9.5		36.2	3.3	
9.5		49.7	59.5		9.5		49.0	29.2		9.5		34.2	16.7		9.5		55.7	49.6	B	9.5		47.5	2.1	
7.5		57.6	6.6	K	7.3	15	2.0	38.7	K	9.2		34.6	35.0		9.5		56.9	17.5		9.5		54.6	22.3	
9.5	4	0.5	30.8		9.5		12.8	14.7	*a*	9.1		35.0	38.5	K	9.5	31	4.0	33.4		8.9		55.4	15.5	
9.5		14.5	12.6		9.5		13.9	8.4		9.3		39.4	56.9	K*b*	9.5		9.9	20.5		9.5	41	5.2	56.8	
9.5		32.7	26.3		8.8		19.5	6.7	K	9.3		46.8	44.2		9.5		10.5	27.7		9.0		9.9	39.4	
9.0		39.2	10.6		9.5		19.5	15.0	*a*	9.5	25	4.2	58.7		9.4		11.2	25.4		9.5		30.6	55.8	
8.3		39.5	39.7	K	9.5		41.0	36.2		8.8		6.9	9.4	K	9.5		12.8	57.4		7.0		38.1	20.3	K
9.5		43.0	21.0		9.5	16	7.5	22.7		9.1		8.5	1.2	*a*	9.5		29.4	53.7		9.3		50.3	25.7	
9.4	5	1.6	55.5		9.5	17	10.4	56.5		9.4		14.2	45.4		9.4		35.2	36.8		9.5		51.2	41.2	
9.5		1.8	9.6		8.4		15.5	15.3		9.5		29.5	21.1		9.5		42.3	57.7		8.8	42	9.2	12.5	
9.5		8.0	4.2		9.4		24.9	47.9		9.4		38.6	49.7		8.7		45.8	44.9		8.8		12.4	42.0	K
9.5		15.3	27.6		9.1		27.9	26.1		9.3		39.1	36.4		9.3		57.0	35.8		9.5		24.1	17.7	
9.5		30.6	55.8		9.2		37.0	44.3	*a*	8.5		46.3	4.5	K	8.7		59.0	33.4	K*b*	9.2		33.2	59.0	
8.8		31.6	4.7	K	9.5		37.1	35.2		9.5		50.6	45.4	B	9.5	32	15.2	59.9		8.0		55.1	52.2	B
9.1		50.8	56.2	*b*	8.8		41.9	12.8		9.3		53.8	0.3		8.6		26.3	3.7	*B*	8.5		56.8	36.4	
9.0		52.7	47.6		9.4	18	29.8	9.7		9.5	26	0.5	42.5		9.5		35.6	20.0		9.4	43	15.3	15.9	
9.5		58.1	12.6		9.5		31.4	50.0		9.4		9.4	32.1		9.4		38.8	27.0	B	9.2		18.5	59.7	
9.5	6	18.2	3.6		8.8		46.5	46.8	K	9.3		12.4	55.1		9.5		41.1	29.6		9.5		28.8	34.0	
9.5		25.3	19.3		9.5	19	4.5	30.2		9.1		18.2	29.8	*a*	9.5		41.1	42.5		8.4		33.7	53.3	K
9.5		34.3	2.1		9.5		28.2	58.6		9.5		19.5	19.5		9.5	33	0.3	4.3		9.5		35.9	44.0	
9.5		41.6	20.7		9.5		31.4	4.4		9.5		21.1	44.8		9.4		13.2	19.5		9.5		39.4	21.4	
9.3		52.5	44.2	*a*	9.3		32.0	10.1		8.8		28.0	27.6		9.0		13.8	57.3		5.5	44	4.9	3.7	K
9.5	7	10.8	53.6		9.2		36.8	52.2		9 3		32.3	6.8		9.0		15.3	57.3		9.5		39.0	58.9	
7.9		11.5	23.7	K	9.4		37.7	52.3		9.5		40.1	16.1	B	9.5		27.1	47.1		9.4		51.8	17.2	
8.1		17.1	12.6	K	9.4		46.4	7.6		9.5		48.2	54.5	B	8.7		37.4	8.7	*B*	9.5	45	15.3	34.1	
9.0		34.0	48.7		9.5		50.3	17.1		9.4		49.7	15.8	B	9.5		39.0	41.3		8.0		30.4	34.3	B
8.0		40.5	18.4	K*b*	9.5		57.5	21.6		9.5	27	1.5	28.2		9.5		57.7	52.9		9.3		51.5	44.2	aB
7.0	8	6.4	9.8	K	9.3	20	9.3	41.1		9.4		8.0	59.3		9.3	34	8.7	18.0		8.9		52.5	45.0	
9.2		19.4	19.1	*a*	9.1		16.6	28.2	*b*	9.5		16.5	26.7		7.7		14.6	20.6	S	9.5		59.2	21.7	
9.5		34.1	15.1		9.5		19.9	29.6		9.2		23.3	52.5		9.5	35	8.2	34.3		9.2	46	12.4	55.8	
9.5		52.2	19.4		9.5		24.7	22.6	B	9.1		25.2	7.0	*a*	9.5		8.7	11.1		9.5		20.6	23.1	
9.1		53.3	27.9		9.5		33.5	28.5		9.2		31.1	27.2		9.3		39.0	7.0		9.5		25.9	14 5	
9.2	9	9.9	21.6		9.2		33.9	19.3	*a*	8.6		34.3	23.9	L	9.5		41.9	2.2		9.3		37.6	53.6	
9.5		15.2	22.7		9.3		36.4	48.0		8.0		39.1	57.0	B	9.5		54.4	9.5		9.5		51.7	27.9	
9.4		30.3	40.3		9.5		49.5	11.5		8.8		40.9	3.3	B	9.5	36	18.6	55.8	*b*	9.5	47	3.5	35.6	
9.2		31.5	50.0		9.5		55.0	5.9		7.1		47.0	38.2	L	9.5		21.9	1.0		9.3		10.4	19.6	
9.5		51.7	0.6		9.5	21	2.0	40.5		9.5		48.2	43.2		9.5		35.0	38.7		9.4		11.3	30.6	
8.2		55.9	43.5	*B*	9.5		4.8	48.3		8.3	28	10.7	29.3	L	8.7		43.1	13.6		9.5		30.6	42.7	
9.3		56.7	13.5		9.5		31.5	28.3		9.5		15.0	11.2		9.5	37	24.8	17.9		9.2		57.4	41.1	
9.5	10	26.8	42.2		9.5		46.6	59.7		9.5		20.0	50.9		9.1		44.2	32.9	aB	8.7	48	16.5	21.0	
9.4		39.7	37.6		9.1		48.5	26.9		9.5		20.9	0.3		7.0		48.8	34.0	K	9.5		31.9	20.4	
8.7		49.8	5.8	K	7.5		56.3	43.5	L	9.5		31.0	3.0		9.4		56.4	45.4	B	9.5		38.4	12.2	
8.9		53.5	46.6		9.4	22	1.5	8.8		8.2		31.5	4.6	K	8.7		58.6	36.4		9.4		39.1	21.0	*a*
9.5	11	0.2	0.5		9.5		7.4	15.5		9.5		34.6	1.3		9.1	38	1.6	35.0		8.9	49	6.6	49.5	
9.5		0.3	41.5		8.6		12.8	19.9		9.1		37.6	3.9	K*b*	8.0		4.7	25.6	K	9.3		12.4	0.7	
9.5		40.0	15.1		9.5		30.3	14.3		9.0		39.3	37.4		9.5		6.6	41.8	B	9.1		14.7	32.0	B
8.9	12	1.0	38.8	K	8.8		34.4	56.3		9.5	29	0.0	32.8		9.5		49.8	47.7		9.5		27.5	3.3	
9.3		7.2	43.0		8.8		37.5	45.3		9.5		10.7	2.7		9.4		50.2	53.2	B	9.2		28.9	26.4	
9.2		30.5	26.0		9.3		50.0	12.3	aB	9.3		10.7	11.0		8.8	39	5.8	54.0		8.7		33.7	10.6	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*28.35*	*0.96*		*10 pr.*		*28.39*	*1.13*		*10 pr.*		*28.42*	*1.23*		*10 pr.*		*28.44*	*1.32*		*10 pr.*		*28.49*	*1.46*	

4101—4160

m	19ᵐ	+10°	
9.4	40 42.3	36.4	B
9.5	51.3	57.9	
9.5	54.2	39.1	
9.5	55.9	31.4	
9.5	50 1.2	18.1	
9.5	14.8	11.9	
9.4	26.7	48.1	
9.4	28.8	57.2	
9.3	38.9	39.3	B
9.5	41.2	8.3	
9.4	43.3	33.0	
9.2	46.6	45.4	B
9.2	48.5	23.1	B
9.5	52.5	58.9	
9.5	51 8.7	31.5	
9.5	15.8	59.3	
8.0	20.7	20.6	K
8.7	21.4	15.4	
9.5	51.2	24.9	
8.6	52.7	19.5	K
9.5	59.1	40.3	
9.5	52 3.4	43.6	
9.4	8.4	56.8	
9.5	13.8	38.3	
9.5	15.3	27.4	
6.7	19.5	55.2	K
9.0	23.3	10.5	
9.5	24.5	1.0	
9.3	33.8	51.8	B
9.5	53 2.7	12.4	
8.8	5.6	44.8	K*b*
8.5	10.5	47.8	R
8.5	11.0	47.6	R
9.3	22.9	13.4	
9.4	34.7	11.6	*a*B
9.5	47.1	8.1	
8.3	51.5	38.2	K
9.5	54 8.0	36.0	
9.0	12.2	10.6	
9.0	14.4	0.8	
9.3	17.4	55.7	
9.4	28.2	41.9	
7.1	31.7	20.9	K
9.3	43.5	29.2	
9.5	45.3	40.2	
9.5	55 15.2	37.7	
7.0	16.0	19.2	K
9.0	38.9	4.5	R
9.5	42.3	15.0	
9.3	48.8	57.5	
9.4	55.0	40.9	
9.5	56.8	15.0	
6.9	57.9	30.5	K
8.9	56 1.2	32.0	K
9.3	2.4	31.9	
9.5	2.9	31.4	
9.5	4.4	33.0	
9.1	23.0	52.7	*b*
9.5	41.7	38.0	
8.5	45.3	31.2	K
	+	+	
10pr.	*28.54*	*1.58*	

4161—4220

m	19ᵐ—20ᵐ	+10°	
9.1	56 53.0	8.2	
8.0	53.2	3.6	L
9.3	55.0	5.2	*a*
9.4	57 2.5	7.9	*a*
8.0	6.2	16.7	L
8.5	32.3	24.6	K
9.1	38.7	51.1	
9.0	58 20.5	37.7	
9.5	44.3	9.8	
9.4	59 2.4	59.0	
9.5	9.4	2.6	
9.5	13 2	42.6	
9.5	35.3	9.8	
8.3	42.0	48.4	R
9.5	51.7	43.9	
8.3	0 2.2	10.2	K
9.5	4.6	55.1	
8.7	17.2	10.3	K
9.2	23.7	40.9	*a*B
7.0	25.5	38.1	L
9.5	42.7	7.5	
9.5	47.8	44.7	
9 3	1 28.7	30.3	B
9.2	32.2	48.5	
9.3	33.0	29.5	
8.7	33.5	39.5	
9.4	35.1	6.1	
9.4	36.1	53.8	B
6.0	43.3	18.1	K
9.2	2 11.0	31.0	*a*
8.5	25.3	30.1	L
7.5	28.2	21.9	K
9.5	52.8	24.0	
9.5	55.3	20.9	*a*
9.5	3 10.0	35.7	
9.0	10.2	6.0	B
9.2	4 22.4	51.4	
9.5	47.7	43.3	
9.1	48.7	41.5	B
9.3	50.1	49.7	B
9.4	54.3	53.2	
9.5	5 6.8	8.4	
7.8	9.5	29.1	L
9.2	26.8	23.9	
8.9	34.2	49.2	L
9.0	35.3	14.2	R
9.4	37.3	39.1	B
8.5	37.3	56.3	L
9.0	44.2	41.2	L
9.5	6 2.3	2.8	
9.4	9.1	1.0	
9.5	11.0	38.5	
9.1	11.2	15.4	B
8.6	22.2	41.5	L
8.9	23.5	21.2	
9.5	25.8	16.0	B
9.5	36.9	49.2	
9.4	48.6	47.9	B
9.5	56.1	4.9	
9.4	7 3.7	54.4	*a*
	+	+	
10pr.	*28.58*	*1.70*	

4221—4280

m	20ᵐ	+10°	
9.5	7 16.3	24.3	
9.1	26.0	56.3	
9.5	38.0	27.9	
7.0	55.5	2.8	L
8.5	57.9	53.0	L
9.5	8 11.8	26.7	
9.0	19.7	25.4	
9.5	46.2	30.5	
8.7	9 5.3	6.6	K
9.2	12.8	41.5	*b*
9.2	16.5	30.8	
8.5	22.5	20.5	L
9.4	33.3	59.5	*a*
9.5	10 3.9	22.9	
9.4	35.0	1.0	
9.5	46.5	6.7	
9.3	54.1	38.5	
9.4	11 21.8	57.9	
9.5	24.3	44.1	
9.5	29.4	22.4	*B*
8.4	38.5	32.0	S
9.3	41.8	16.5	
9.4	49.3	31.7	
9.5	53.6	59.0	
9.5	59.5	26.5	
9.0	12 10.2	59.3	
9.5	20.1	4.9	
9.5	31.4	58.6	
9.4	38.3	13.1	
9.0	13 9.8	41.8	
9.4	22.4	6.5	
8.0	30.3	21.0	L
9.5	39.3	43.7	
9.0	41.3	34.8	
8.0	43.3	18.6	L
9.4	56.5	5.8	
9.5	14 0.0	0.0	
9.5	22.8	40.6	
8.0	40.8	31.3	K
9.2	52.0	32.0	
8.8	15 8.6	58.6	K
9.5	16 17.1	58.1	
8.9	17.5	32.8	
7.8	21.3	38.1	L
9.4	25.2	44.5	
9.5	27.5	55.1	
9.5	32.0	11.7	
8.9	33.9	35.8	
9.5	17 4.8	9.2	
8.7	18.1	45.7	L*b*
9.5	37.8	25.9	
9.5	37.8	8.0	
9.5	50.0	55.7	
9.2	52.3	49.2	K
9.5	18 2.3	34.5	
9.4	9.6	53.4	
9.5	22.3	9 3	
9.4	51.8	34.8	
9.5	58.8	45.8	
9.3	19 6.1	3.0	*a*B*b*
	+	+	
10pr.	*28.65*	*1.84*	

4281—4340

m	20ᵐ	+10°	
9.5	19 27.8	14.5	
9.5	28.3	40.7	
9.0	42.8	46.1	
9.0	48.8	28.0	
9.1	49.8	57.9	L
9.4	55.0	57.2	
9.0	20 0.5	45.8	
9.5	5.6	33.4	
9.5	9.2	58.2	
8.8	9.8	53.6	K
9.5	23.3	53.0	B
9.3	24.8	55.1	
9.4	35.6	0.7	
9.3	40.3	24.4	
9.0	45.8	43.1	
8.0	21 41.5	30.3	K
9.5	45.3	41.7	
9.4	46.1	5.1	
9.1	22 34.8	12.5	*a*
9.4	53.8	18.2	
9.5	23 3.1	4.4	
9.3	12.5	26.5	
5.8	21.3	25.5	L*b*
9.5	38.6	30.6	
9.1	58.5	57.3	
8.7	24 2.3	31.0	
6.5	17.6	47.8	K
9.4	20.8	9.3	*a*B
9.5	21.7	44.8	
9.5	22.7	39.8	B
8.9	42.7	1.4	
9.4	46.4	11.0	
9.5	47.3	33.1	
9.1	25 11.6	6.5	*a*
9.0	13.3	41.0	K
9.5	20.7	0.2	
9.0	37.3	15.5	
9.5	44.8	0.2	
9.3	49.4	42.5	B
9.4	26 2.4	41.8	*a*
3.8	17.0	49.2	K
9.5	27.1	39.5	
9.5	56.6	35.8	
9.5	27 30.4	31.3	
8.5	31.4	49.9	P
8.5	58.9	50.5	
9.1	28 4.9	59.9	
8.0	23.6	15.1	R
9.5	30.9	45.7	
8.5	31.4	50.6	P*b*
9.5	43.1	14.7	
9.3	29 47.9	28.3	
9.5	56.9	55.2	
9.4	30 9.0	15.0	
9.4	18.9	14.3	*a*B
9.4	22.9	32.2	
9.1	32.9	20.7	
9.5	43.2	39.5	
5.0	53.4	53.4	K*b*
8.7	31 17.6	14.0	K
	+	+	
10pr.	*28.72*	*1.97*	

4341—4400

m	20ᵐ	+10°	
9.1	31 30.4	30.8	B
9.5	46.4	50.1	
9.5	53.6	37.5	
9.5	32 0.4	23.9	B
9.5	5.0	24.4	D
9.3	8.2	26.4	B
9.5	8.3	35.5	
9.5	12.2	21.8	B
8.4	15.8	28.5	L
9.5	49.1	26.7	B
6.8	54.9	44.3	L
9.4	33 1.0	23.9	
9.4	1.6	50.6	
7.9	12.6	4.9	L
9.1	33.4	32.3	
9.2	38.9	28.8	
8.7	57.2	4.0	K
9.5	34 29.8	39.2	
8.6	35 20 4	17.8	K
9.4	36 20.4	9.5	
9.5	43.7	55.6	
9.5	55.9	31.6	
9.4	37 4.4	16.8	
9.4	23.2	24.6	B*b*
9.5	34.4	19.9	
9.5	59.6	49.3	
9.4	38 4.8	39.5	B
8.9	15.9	4.0	B
9.4	27.1	36.3	D
9.5	33.3	15.1	
8.3	35.9	55.1	L
9.3	37.3	16.6	B
9.5	58.0	53.5	
9.2	39 3.2	54.5	*B*
9.2	3.6	33.9	
9.5	30.6	36.5	B
9.0	33.1	40.6	K
9.3	40 2.4	23.7	
9.3	16.4	21.3	
9.0	28.4	19.9	
8.6	54.3	0.0	
9.5	42 5.6	18.9	
9.4	19.6	33.3	
9.1	22.0	49.7	K
9.1	24.4	52.4	*a*
9.4	25.5	26.7	B
9.5	28.4	39.9	
7.2	49.7	57.4	K
9.5	43 25.8	13.8	
9.4	26.9	24.4	
9.5	44 20.7	21.2	B
9.5	33.7	21.7	
9.5	35.2	4.8	
8 3	37.6	35.4	
8.8	38.9	41.3	
8.6	45.7	55.1	
8.2	45 21.0	11.4	K
9.5	27.6	4.4	
9.5	44.2	5.2	
9.2	45.9	52.0	
	+	+	
10pr.	*28.81*	*2.13*	

4340ᵃ
9.5 | 31 24.6 | 16.1 |

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	20m		+10°			20m—21m		+10°			21m		+10°			21m		+10°			21m—22m		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.2	45	59.1	26.2	L	9.3	59	10.4	56.1		9.3	12	42.6	8.0		9.4	28	3.3	32.6	Kb	9.5	43	33.0	3.0	
9.5	47	12.5	10.5		8.8		25.2	12.3	K	9.0		53.6	57.2	K	9.4		14.4	56.3	B	9.5	44	0.3	51.8	
8.3		22.9	31.0	Kb	9.4		31.7	39.5		9.1	13	1.0	2.4	a	9.4		46.7	9.9	aK	8.4		12.0	13.3	Kb
7.6		36.4	54.3	K	9.5	0	13.9	31.5		*9.4		16.4	7.0		9.5	29	5.6	50.0		9.5		14.6	55.8	
9.2		39.5	50.8	K	9.5		16.6	54.5		9.0		29.7	58.8		9.4		6.5	0.8		7.0		46.9	26.4	K
9.5	48	11.5	58.9		9.5		47.1	24.9		9.4		34.7	56.1		9.3		18.6	50.4	aB	9.5	45	0.0	40.8	
9.0		14.8	8.2	B	9.5	1	31.0	40.3	B	9.5		36.9	37.2	B	8.5		24.2	53.4	K	9.5		24.5	32.8	
9.4		15.4	25.7		9.1		38.6	21.9	b	9.5		38.6	47.5		9.0	30	30.3	43.0		9.5		34.0	32.0	
8.9		15.6	43.1		9.2	2	18.6	53.3	K	9.2		42.4	30.2	B	8.2		32.2	35.3	K	9.5		48.4	25.5	
8.9		19.2	45.6		9.5		20.0	58.4		9.5	14	4.6	26.4		8.9		47.7	57.5		9.4	46	14.1	50.6	
9.1		20.3	9.4	aB	9.4		32.0	38.1		9.0		50.6	13.5	K	9.5	31	6.6	44.8		8.1		21.5	56.4	Kb
9.4		29.3	43.4	B	9.5		38.9	11.8		9.5	15	5.9	18.5		9.3		9.3	34.7	K	9.5		44.4	45.4	
8.5		38.9	50.3		9.2		43.2	19.4		9.2		23.8	21.5	K	9.3		14.2	36.1	K	8.8	47	4.4	36.3	K
8.3		56.4	20.0	K	9.0		50.9	33.8	K	9.5		27.0	15.4		9.5		35.4	8.7	R	9.1		16.8	6.2	a
9.5	49	1.0	51.6		9.5		51.2	53.4		8.9	16	23.5	57.0	K	8.1	32	2.4	59.2	K	8.6		35.5	15.1	K
9.2		6.9	59.7	B	8.1		58.9	31.2	B	9.5		39.3	39.5		9.4		14.0	16.7	B	8.7		37.9	5.6	K
9.3		15.0	13.1		9.4	3	5.6	13.9		8.5	17	7.2	4.4		9.0		47.2	21.4	B	8.5	48	20.2	26.6	K
8.8		57.2	24.9	K	8.5		12.4	8.7	K	9.5		38.0	38.9	B	9.1		48.6	27.8	B	9.5		24.5	50.0	
9.2		57.7	16.2	K	9.4		15.6	30.9		9.5		38.1	3.4		9.0	33	58.3	37.4	K	8.5		27.0	13.7	K
9.3	50	2.0	18.7	B	9.4	5	5.3	5.0		9.5		38.9	16.6		8.5	34	9.4	59.8	K	9.5		55.8	50.3	
9.0		19.5	37.2	L	8.6		5.9	2.4	K	9.5		48.2	1.1		9.2		21.7	3.3		8.5	50	4.4	6.2	L
9.5		37.0	7.6		9.0		21.2	27.8		8.3	18	27.0	43.6	B	9.2	35	15.0	36.5		8.9		4.4	46.2	
8.5	51	14.4	4.8	L	9.5		32.0	13.5		9.0		29.2	28.0		8.5		20.5	51.3	K	9.5		18.1	47.0	
9.5		14.9	15.0		8.6		35.6	4.9	Kb	9.4		41.5	5.0		6.3		29.2	11.0	K	9.5		46.4	1.4	
5.2		27.9	18.6	Kb	9.3		44.0	13.5		9.3	19	4.5	30.9	B	9.4		59.6	54.4		9.2	51	16.7	1.1	
9.5		31.0	15.0		9.5	6	18.0	13.2		9.5		12.6	22.6		8.8	36	6.6	27.8	K	9.0		42.9	18.6	Kb
9.3		58.2	47.1	B	8.0		20.8	36.5	K	7.3		52.9	3.1	K	9.1		16.6	24.2		9.5		44.4	40.0	
9.2	52	11.7	59.2		8.5		26.9	50.0	K	9.4		56.2	33.3		8.0		42.8	27.1	K	9.5	52	2.9	30.0	
9.5		44.5	14.5		9.4		44.2	37.1		8.5	20	1.6	19.5	L	9.0		50.6	33.0	K	9.0		13.3	36.6	
9.3		46.8	46.1		8.9		47.5	9.1	K	9.5	21	1.9	53.7		9.5	37	1.0	23.0		9.5	53	4.0	32.2	
9.5		48.4	59.4		8.8		54.7	29.4		9.3		19.6	9.7		9.5		11.7	19.7		9.3		43.3	43.5	a
9.4	53	6.5	40.9	B	8.7	7	12.0	35.4	K	9.5		28.8	59.7		9.5		16.8	41.0		9.3		48.9	12.9	a
9.4		14.5	46.6		9.4		47.2	54.3		9.5		35.1	6.7		9.5		19.7	51.7		9.2	54	11.7	41.2	aB
9.5		21.2	50.0		9.0	8	23.4	26.4		6.5		50.2	28.8	Lb	9.4		26.5	47.7		9.4		13.4	13.9	aB
9.5		24.5	4.7		9.3		25.7	47.1		9.3	22	0.0	23.0		9.5		28.7	54.8		9.0		44.2	43.5	K
9.5		34.8	5.1		8.0		37.3	11.8	K	9.2		13.1	35.5		9.5		54.1	41.2	a	6.5		55.5	16.1	K
9.3		46.0	5.0		9.4		42.0	35.5	B	9.4		28.6	37.5		9.3		57.8	5.3	a	9.0		56.0	27.0	
9.5	54	5.0	6.0		7.5		51.5	54.0	L	9.3	23	20.0	35.3		8.9	38	11.0	40.1	K	8.5	55	0.1	53.7	K
9.5		7.3	46.8		7.5	9	1.2	6.1	L	9.5		24.1	35.7		9.4		31.8	23.1		8.5		21.4	39.4	K
8.5		27.8	10.4	K	8.0		7.2	21.1	K	8.5		26.3	15.6	K	9.2		46.2	33.3	K	9.5		59.9	6.4	
9.5		42.3	16.3		9.2		19.6	59.5		8.4		51.3	40.2	K	9.4		52.5	20.3		6.2	56	13.3	42.1	K
9.1		48.2	3.4	a	9.5		43.9	11.2		8.0		59.7	44.7	K	9.3		54.0	12.7		9.2		52.7	2.7	K
8.9		48.6	59.6	Kb	8.9	10	8.6	32.3	K	8.9	24	0.2	51.7	K	9.5	39	30.0	51.3		9.5		59.4	54.7	
9.2	55	8.2	2.6	a	8.3		12.0	57.4	K	9.2		19.3	46.7	K	9.5		41.2	7.4	a	9.1	57	0.7	3.9	K
9.0		24.2	2.8		9.5		14.0	19.5		9.1		25.9	32.3		9.3		41.2	42.7		9.5		19.9	31.4	
9.3		31.0	27.0		9.1		22.2	7.4	K	9.3		29.6	47.8	K	8.3	40	14.5	26.1	K	8.6		26.4	4.3	
9.3		39.0	34.6		9.5		43.5	27.0		9.5		54.6	12.5		8.5		21.3	5.5	K	9.5		31.5	18.5	B
9.4		45.3	41.2	B	9.0	11	5.2	37.4	K	9.4	25	0.3	29.8		9.4	41	3.5	32.2	B	9.5		37.9	44.6	
8.0		49.0	42.3	K	9.0		16.2	32.6	K	9.5		2.0	28.5		9.3		6.8	39.6		9.5		41.4	28.2	
9.4		52.1	9.0	aB	9.5		19.4	17.7		7.0		9.2	16.3	K	9.3		9.0	50.3		9.2		45.6	21.6	a
9.3		58.7	11.8		9.1		19.6	12.9	a	9.5		31.0	48.0		9.3		9.3	40.6		9.4		58.4	21.3	a
9.5	56	53.2	8.7		9.0		26.0	3.3		9.5		54.0	54.8		8.5		10.2	30.9		8.9	58	23.9	19.9	
9.1		54.2	24.2	b	9.4		34.0	39.4	B	8.8	26	4.3	4.5	K	9.4		16.1	36.7		9.3		41.9	38.7	
9.5		56.2	43.0		7.0		35.9	57.9	K	9.3		11.0	51.0		9.2		23.6	54.9		9.5	59	0.7	38.4	
9.5	57	1.9	3.7		9.5		46.9	55.8	a	8.7		40.9	15.6	K	9.3		34.0	18.7	aB	9.3		58.0	16.4	K
9.5		14.1	7.3		6.3		52.2	36.1	K	8.0		50.4	3.6	K	9.4		43.1	3.0	a	7.6	0	31.3	3.9	Kb
9.5	58	31.2	43.0		9.5	12	13.0	0.5		9.5	27	7.9	12.9		9.0	42	35.6	2.6	K	9.5	1	19.9	25.5	
9.5		32.2	15.3		9.5		21.2	24.3		9.5		17.9	58.6		8.1		58.7	8.0	K	9.5		52.6	5.1	
9.5		42.1	56.4		9.4		25.6	34.5		8.2		20.8	47.9	K	9.4	43	4.0	13.3		9.3	3	1.7	23.4	b
9.5	59	2.8	40.9		9.5		30.1	36.8		8.0		29.3	16.7	K	8.7		24.5	15.7	K	9.5		25.8	3.3	
		+	+				+	+				+	+				+	+				+	+	
10pr.		28.91	2.29		10pr.		29.03	2.43		10pr.		29.14	2.57		10pr.		29.27	2.72		10pr.		29.42	2.84	

4524a			
9.7	13	23.8	37.4	B

4701—4760

m	22ª ′ ″	+10° ′	
6.0	3 31.9	54.7	K
9.4	50.8	3.6	
9.5	51.4	12.6	
9.5	5 13.5	24.1	
9.5	23.9	59.7	
9.0	31.5	51.2	
9.0	43.4	40.7	
8.2	6 9.3	9.4	K
9.2	16.7	4.3	aB
9.0	46.9	13.7	K
9.3	7 1.2	17.4	K
9.5	29.9	15.3	
9.5	35.7	54.6	
9.2	41.9	55.4	R
8.7	55.4	19.0	K
9.2	8 5.3	6.7	K
9.1	12.3	8.3	K
9.1	59.7	34.0	
9.2	9 13.6	2.4	
9.5	37.5	51.4	
9.3	59.0	28.2	Kb
9.4	10 8.5	51.4	B
9.4	48.4	38.5	
9.3	11 6.7	59.2	K
9.3	34.0	33.8	
8.7	35.2	43.0	
9.5	46.0	35.9	
9.5	55.7	43.3	
9.4	12 22.1	52.3	
9.5	40.5	40.0	
7.8	13 12.2	19.7	K
8.9	13.1	6.4	K
9.4	34.9	16.0	
9.2	57.2	29.4	
8.7	14 1.8	9.6	K
8.6	23.4	30.8	
8.5	25.5	52.5	
9.3	30.9	41.1	
8.6	15 7.6	21.1	B
8.7	25.2	49.4	
9.1	16 24.4	37.6	
9.2	30.9	1.2	
8.5	31.9	23.4	L
8.3	18 10.9	48.0	K
9.4	36.7	4.5	
9.5	47.8	31.8	
9.1	58.7	12.8	a
9.2	19 3.2	13.0	
9.3	7.9	57.5	
9.1	11.0	14.2	a
8.3	12.3	2.3	
8.5	16.2	39.2	K
8.6	16.8	50.8	Kb
8.4	58.7	32.2	K
9.3	20 10.9	33.8	
9.1	14.7	23.7	K
9.5	32.9	7.0	
9.5	21 26.4	41.8	
9.3	49.2	40.5	
9.0	22 29.4	30.4	
	+	+	
10pr.	29.60	2.98	

4761—4820

m	22ª ′ ″	+10° ′	
9.1	22 32.4	50.5	b
9.3	35.8	9.0	aB
9.5	23 12.4	2.1	
8.6	27.4	26.4	K
9.5	51.1	5.7	
8.7	56.5	23.9	K
9.5	24 30.6	15.0	
9.5	30.8	55.0	
7.8	33.2	2.1	K
9.2	57.5	6.4	
9.3	25 50.2	20.7	
9.5	58.4	49.5	
9.5	26 32.4	57.8	
8.7	49.5	33.6	L
9.5	27 8.0	40.0	
9.4	9.5	30.8	
9.5	27.5	37.5	
9.5	28 5.5	16.2	
9.5	49.5	26.9	
9.5	29 4.4	9.8	
7.2	26.2	57.7	K
8.8	42.5	39.2	K
9.5	46.9	26.8	
9.2	56.5	19.9	b
9.5	30 38.0	20.3	
9.2	43.2	45.2	K
9.3	44.5	21.4	
9.2	31 15.9	47.0	
9.5	19.6	0.4	R
9.3	32 3.8	27.3	B
9.3	22.5	35.8	
9.2	46.7	31.8	b
9.2	33 5.0	7.9	
9.5	46.0	29.0	
9.2	57.5	52.9	
9.2	34 13.0	45.4	a
3.5	16.7	5.3	K
8.8	25.0	43.3	K
9.3	51.7	12.8	
7.8	56.2	19.9	K
9.5	35 1.8	31.1	
9.5	13.6	4.6	
9.0	33.9	7.7	K
9.3	35.6	14.6	
7.3	36 30.9	12.3	K
9.5	46.5	50.6	
9.5	49.0	55.8	
9.5	57.4	14.0	
9.5	37 36.5	34.5	
9.0	43.2	19.0	K
7.9	58.3	55.8	K
9.1	38 13.2	25.9	a
9.5	15.5	57.4	
9.5	19.0	59.7	
7.7	41.4	26.4	K
9.5	53.5	45.0	
9.3	56.4	54.0	
9.2	39 5.1	59.1	
9.0	13.7	58.0	
9.5	34.3	47.8	
	+	+	
10pr.	29.79	3.10	

4821—4880

m	22ª ′ ″	+10° ′	
8.9	39 46.7	31.5	
9.5	49.2	12.7	
9.4	40 1.9	56.6	K
8.9	5.6	48.8	K
9.4	43.1	38.6	B
9.3	44.7	3.7	
9.0	41 8.5	6.9	K
9.4	28.5	1.0	
9.5	39.0	4.6	
~~9.5~~	~~45.+~~	~~53.8~~	
9.5	59.0	21.2	
9.3	42 2.5	14.8	
9.4	43 10.5	43.1	K
9.5	18.4	51.4	B
9.1	31.8	39.4	K
9.5	50.7	11.9	
9.5	44 25.0	51.0	
9.5	53.5	57.5	
9.2	45 4.7	53.2	b
9.5	13.2	15.5	
9.5	46 6.0	4.3	
9.5	33.0	13.6	
9.5	47 2.1	7.6	a
8.3	21.9	7.2	K
8.0	27.9	42.8	K
9.5	41.8	2.1	
9.4	48 28.5	45.2	
9.5	43.2	24.5	
9.4	56.3	18.0	
9.5	57.9	31.7	
9.5	49 3.2	5.0	
8.9	29 8	57.9	R
8.7	54.5	24.6	K
9.1	50 26.7	33.7	K
9.5	51 2.6	0.5	
8.5	6.5	30.2	K
9.5	44.5	15.5	
9.5	44.8	20.5	
6.1	56.8	56.8	K
9.5	52 16.2	6.0	
9.4	40.7	42.8	Kb
9.3	49.8	21.2	K
9.5	53 4.0	11.7	
9.5	17.2	34.2	
9.5	54 6.4	3.2	
9.2	47.5	34.8	K
9.5	55 26.5	9.2	
9.5	34.5	18.9	
9.5	54.1	10.8	
9.2	55.1	34.8	K
9.5	56 9.4	50.9	
9.4	31.0	15.4	
8.6	37.9	19.3	K
7.7	57 4.1	24.0	K
9.5	15.2	36.9	
9.3	30.9	9.3	
9.0	58 0.4	6.7	
9.5	3.0	8.1	
9.3	6.5	4.0	
9.5	8.2	39.8	
	+	+	
10pr.	29.96	3.19	

4881—4940

m	22ª—23ª ′ ″	+10° ′	
8.8	58 20.2	29.7	K
9.5	30.5	30.0	K
9.5	55.9	54.3	
9.3	59 35.1	16.6	
9.0	0 24.1	19.6	
9.5	28.5	43.8	
7.0	1 31.1	9.6	bK
9.5	43 3	35.5	
9.5	46.3	41.9	
9.3	2 3.8	3.5	
8.6	39.1	57.5	K
9.4	55.2	54.8	K
9.4	57.3	47.5	
7.7	3 11.0	1.6	L
9.5	45.2	15.4	
9.5	4 4.5	56.9	
9.4	21.5	13.6	
9.5	5 18.4	45.4	
8.1	19.7	9.8	L
9.4	34.5	48.5	
9.5	51.3	42.6	
6.2	6 9.8	16.6	L
8.4	34.6	45.4	R
8.8	41.5	11.1	K
9.5	7 50.5	25.0	
9.4	8 5.6	49.1	K
9.5	13.0	57.3	
9.5	9 37.9	1.3	
9.4	10 4.9	7.0	
9.4	15.4	14.0	
9.4	27.3	57.4	
9.5	35.0	11.0	
8.8	11 54.3	40.2	K
8.9	58.2	49.2	K
9.1	12 7.7	23.3	
9.2	27.4	19.6	
9.1	36.9	23.1	
9.2	52.4	45.1	K
9.5	13 6.9	31.7	
9.5	44 7	54.4	
9.3	53.0	49.5	
9.5	14 6.8	50.4	
9.1	51.7	24.7	a
9.5	58.4	8.5	
9.5	15 20.7	42.5	
8.7	20.7	24.2	K
9.3	16 1.1	2.8	
9.3	5.0	23.5	K
9.5	16.7	59.2	
9.2	33.2	51.4	b
9.3	43.4	22.1	K
9.4	17 1.3	19.7	K
9.5	23.8	46.6	
9.4	47.7	29.0	R
9.2	19 23.7	34.9	R
9.0	43.7	17.0	R
9.5	50.5	7.0	
7.9	20 36.0	20.5	K
8.5	21 25.4	42.5	K
9.5	35.3	14.4	
	+	+	
10pr.	30.18	3.26	

4941—5000

m	23ª ′ ″	+10° ′	
9.1	22 4.2	6.6	a
8.5	32.2	52.6	K
9.4	23 12.4	6.7	a
9.5	49.8	16.3	
8.4	24 1.6	5.7	Kb
9.5	11.0	4.7	
8.3	48.7	43.2	
8.3	25 1.2	23.3	K
8.0	13.4	11.0	K
8.8	37.0	42.8	K
9.4	59.6	33.0	
9.5	26 38.7	6.3	
8.3	49.4	22.8	K
9.5	27 18.0	50.9	
9.5	38.3	50.7	
9.1	39.7	41.3	b
9.1	46.8	45.1	
7.5	53.7	9.1	K
8.9	28 24.3	10.2	K
9.0	26.2	20.2	
9.5	29 6.2	13.8	
9.5	23.3	18.0	
7.8	37.0	12.5	Kb
8.9	45.9	49.4	K
9.5	30 1.4	24.3	
9.3	24.9	18.3	
9.5	32.7	41.4	
9.2	33.0	26.1	
9.2	34.5	48.0	K
9.0	40.4	32.8	K
9.5	31 34.7	43.4	
9.2	58.9	58.1	K
9.0	32 1.3	12.0	B
9.3	8.8	20.6	B
9.4	18.5	59.7	a
9.2	29.4	7.2	K
9.2	54.8	38.4	b
9.0	59.4	3.3	B
9.4	33 3.3	44.0	
9.5	35 5.8	26.6	Rb
9.3	28.8	57.0	a
8.9	36 5.0	48.2	R
9.2	11.3	27.3	R
9.5	12.6	4.3	
9.1	44.8	26.0	K
9.2	37 15.4	56.8	
9.3	28.8	33.3	
9.4	38 17.8	45.1	B
8.0	54.6	17.6	K
9.1	40 2.9	38.3	B
8.5	18.8	35.7	Kb
9.5	41 31.0	20.4	
8.8	38.3	50.2	
9.4	42 11.0	24.3	B
9.4	14.5	57.3	
8.9	19.5	22.1	
9.4	31.0	21.6	
8.9	34.5	56.8	K
9.3	39.1	36.6	
9.3	49.0	37.1	R
	+	+	
10pr.	30.40	3.31	

5001—5006					5007—5011					5012—5016					5017—5021					5022—5026				
	23h		+10°			23h		+10°			23h		+10°			23h		+10°			23h		+10°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	43	28.4	52.6		8.5	48	59.1	6.7	K	9.3	49	53.4	0.1		7.0	52	25.3	28.0	K	8.5	54	55.8	12.1	Kb
9.4		52.5	56.4		9.0	49	1.0	28.8	K	7.0	50	22.8	39.6	K	7.3		26.1	52.7	L	8.5	55	15.8	5.7	K
9.5	44	25.8	28.8		9.5		27.1	3.2		8.5		38.6	44.7	K	9.5	53	29.8	46.9		9.0	56	43.8	27.4	K
6.0	45	16.0	7.8	Kb	8.8		35.8	24.7	K	9.0		43.8	11.4		9.2		53.8	45.4	K	9.3	57	3.8	19.3	K
9.5	47	12.8	3.6		9.3		44.0	19.0	K	8.7	52	19.0	32.9	K	9.5	54	1.3	51.4		9.5	59	27.8	25.8	
9.5		17.8	59.1									+	+											
										10pr.		30.61	3.34											

Zone +11°

1—40					41—80					81—120					121—160					161—200				
	0h		+11°			0h		+11°			0h		+11°			0h—1h		+11°			1h		+11°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	1	14.7	38.1		8.0	13	10.4	31.5	L	9.3	33	31.9	47.1		9.5	50	2.8	18.6		9.5	7	20.0	58.3	B
8.0		30.0	59.8	K	9.5		15.4	31.1		9.3		36.0	35.0		8.5		19.6	15.2	K	9.5		34.2	54.2	
9.4		32.0	11.5		9.4		27.1	30.6		8.8		36.7	9.5	K	9.5		26.8	16.6		9.2	9	58.9	7.7	ab
8.3		42.6	59.7	K	7.2		31.1	57.6	K	9.5	34	8.1	36.5		8.5		53.8	21.1	Kb	9.0		59.5	31.8	
8.9	2	3.5	34.8		9.2		42.8	55.1	K	9.2		16.8	39.0	B	9.5	51	8.5	22.8		9.4	10	26.2	59.7	B
9.5		21.9	2.0		9.1	14	35.4	6.8	K	8.2		36.7	9.4	K	9.3		21.7	21.0	B	9.3	11	46.8	35.6	
8.0		25.6	54.4	K	9.5		58.9	26.2		9.3	35	27.2	18.0		9.1	52	10.4	15.6	B	8.0	12	4.5	23.5	K
9.0	3	3.0	32.8		9.4	15	21.9	38.1	B	8.8	36	19.5	26.1	K	9.3		18.0	8.5		9.3		16.8	24.9	K
9.5		10.0	16.0		9.2		24.2	16.0	K	9.5		50.9	47.5	a	9.5		29.8	20.0		8.3		34.0	1.2	B
8.3		12.6	59.8	K	9.5		54.4	30.5		9.3	37	58.6	43.0		8.0		38.7	9.3	K	9.0	13	24.7	0.6	
9.5		16.8	10.0	B	8.0		58.7	1.4	K	9.0	38	4.2	46.8		9.3		39.5	17.7		8.5		37.9	9.3	K
8.8		29.7	58.2	K	9.5	16	7.9	39.9		8.3		31.8	18.5	K	8.8	53	27.7	37.0	K	7.0	14	18.5	50.3	Lb
9.3		45.3	57.7	K	9.5		44.9	57.5		9.3		55.5	33.3	B	9.5		34.1	57.8		8.8		33.8	54.3	
9.5	4	13.4	29.4	a	9.3	17	33.8	8.6		9.4	39	3.0	30.5		8.9		44.6	10.2	K	9.1	15	32.6	53.8	K
9.3	5	17.7	55.2		9.5		54.3	56.8		8.5		21.3	43.7		8.0		45.9	8.1	K	8.5	16	11.5	11.3	K
9.3		31.6	45.3	B	9.2		54.6	3.3		5.2		28.4	11.7	K	9.3		57.8	9.6	B	9.0		20.6	38.0	Kb
7.8		32.0	30.8	K	9.5	18	5.5	44.0	Bb	9.3		59.9	47.2		9.5	54	17.1	46.0		8.6	17	13.5	46.7	K
9.0	6	28.9	19.7	K	9.5	20	54.7	12.5		8.8	41	4.4	22.4		9.5		49.8	11.0		9.2		46.1	51.1	B
9.4		37.1	18.1	K	9.1	21	1.2	47.5	b	9.0		32.9	30.8		9.0	55	8.7	8.0		9.5	18	35.1	36.3	B
9.0	7	1.0	35.3		9.5		5.6	5.0		9.5		43.8	54.1	B	9.5	57	2.0	54.0		9.5	19	20.6	54.7	
9.3		6.9	35.3	a	9.5		40.9	11.8		9.5		43.8	48.1		9.5		15.1	28.0		9.5		31.4	30.3	B
8.5		12.5	25.9	K	9.5		43.1	19.0		8.6	42	38.7	2.4	K	8.3		57.1	40.5	K	9.5		35.5	55.4	
9.5	8	8.3	54.0		9.5	22	1.3	39.2		9.5	43	0.8	38.4		9.5	59	33.7	1.9		9.5		37.9	31.9	R
9.5		36.0	57.9		9.5		52.4	56.8		9.1		27.2	3.8	Kb	8.9		36.5	18.7	K	8.7	21	14.1	42.6	K
9.1		38.0	7.5	a	9.4	23	42.2	52.3	B	9.3		38.5	29.8		9.4	0	9.0	57.5	a	9.5		18.2	56.1	
9.5	9	3.4	56.0		9.5	24	56.0	58.6	B	7.0	44	0.1	59.9	K	8.8		23.8	16.6	K	9.3		35.4	55.6	
8.0		10.6	8.8	Kb	8.8	25	35.5	12.8		9.5		0.2	7.9		9.3		24.3	21.0		8.1		45.1	39.4	K
9.2		16.3	2.3		9.1	26	9.1	52.0	b	9.1		5.8	31.7	K	9.4		25.5	53.5		9.5	22	22 5	4.3	
9.4		30.1	44.5	B	9.3		22 8	41.9		9.5		41.4	6.0		8.8	1	19.2	58.2		9.5		27.5	16.9	
9.4		32.3	30.8	B	9.3	27	31.6	20.1		9.5	45	14.1	25.5		8.9		30.8	25.5	Kb	8.8		35.0	54.5	K
9.3		36.8	29.0	B	9.3		46.0	11.5	B	9.1		17.5	28.0	b	8.3		33.0	54.0		9.5	23	10.4	8.4	
9.5		41.0	27.1		8.2		58.5	2.4	Kb	9.5		50.8	10.5		8.2		38.8	14.2	K	9.5		18.8	48.8	R
8.0	10	11.9	13.7	K	8.8	28	53.7	25.2	K	9.5	47	19.8	44.7		9.1		52.8	27.7	K	9.5		42.5	1.0	
6.5		28.8	58.0	Kb	8.8	29	31.9	14.0	K	9.4		47.9	0.6		9.4		53.3	7.5		9.0	24	21.8	6.1	K
9.5	11	6.4	25.4		8.9	31	1.2	15.3	Kb	9.5	48	9.8	48.2	B	8.9	2	23.7	54.1	Kb	8.7		24.2	32.6	
8.8		12.1	53.4	K	9.1	32	16.0	53.6	b	9.5		21.1	34.9		9.4	3	19.0	57.0		9.3		39.0	31.3	a
9.5	12	21.0	29.5		9.3		22.6	19.4	B	9.5		22.1	7.2		8.6		58.3	34.6	K	9.5		48.0	1.6	
9.5		35.8	15.8		8.8		41.9	12.8	K	8.8		53.6	55.9	K	6.8	4	42.3	31.1	K	8.2		52.5	7.8	K
9.5		43.9	9.4	B	9.5	33	10.8	5.7		9.3	49	32 5	14.5		9.0	5	8.8	12.8	K	9.5	25	41.0	28.5	
9.0	13	0.0	17.4		8.8		20.6	28.4	Kb	8.2		45.7	39.1	Kb	9.2	6	2.2	57.0		9.5	26	22.9	3.8	
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.81	3.34		10pr.		30.97	3.32		10pr.		31.21	3.28		10pr.		31.39	3.22		10pr.		31.64	3.14	

-3° +11°

201—260

	1ᵘ		+11°	
m	′	″	′	
6.8	27	11.0	48.6	Kb
9.5	28	9.0	21.2	
9.1		22.5	35.2	K
8.7	29	16.5	59.6	B
6.0		25.1	25.3	K
9.3		53.9	14.1	K
7.5		59.1	20.9	K
9.4	30	33.3	38.4	B
9.3	31	26.3	27.7	
8.3		29.6	42.0	K
9.5	32	1.2	22.8	
9.2		4.6	59.4	
9.3		37.5	9.0	K
9.5		56.8	18.7	
9.5	33	14.3	11.5	
9.1		25.5	22.4	b
9.5	34	15.6	18.8	
8.5		17.7	12.9	
9.1		32.1	55.1	R
9.1		53.2	16.5	
8.5	35	19.5	50.1	R
9.5	36	4.8	39.2	
9.5		18.4	5.6	
9.5		29.2	54.4	
9.3		44.6	24.5	
9.5		44.7	6.0	
9.5		56.8	11.5	
9.3		58.0	46.6	K
9.5	37	48.3	37.9	
9.5	38	35.6	13.7	a
9.2		54.7	41.2	K
9.0	39	5.4	12.6	
9.4		55.5	17.1	
9.2	40	6.8	32.1	
9.2		12.0	35.2	
8.7	41	27.1	40.1	K
8.9		33.4	52.5	K
9.0		34.1	26.2	R
9.2		38.9	18.1	a
9.5		51.7	12.2	
8.9	42	47.2	17.5	K
9.4	44	23.7	49.1	
9.5		25.9	42.4	
9.3		29.1	54.3	
8.0		52.7	43.3	K
9.3	45	21.2	12.6	
9.5		32.6	33.2	
7.2		45.2	58.3	K
9.0	46	12.3	55.1	
8.7	47	42.6	32.4	K
7.5		52.9	52.0	Kb
8.8		55.5	6.2	K
9.5	48	7.5	59.8	
9.5		9.5	55.4	
8.5		16.7	34.5	Kb
9.5		41.3	42.2	B
9.5		50.3	45.7	B
9.1	49	48.4	31.4	B
9.5	50	10.8	44.5	
9.5		40.7	34.0	
10pr.		+ 31.86	+ 3.04	

261—320

	1ᵘ—2ᵘ		+11°	
m	′	″	′	
6.2	51	40.8	36.1	K
8.6	52	31.8	41.0	K
9.5	53	43.5	54.4	
8.3	54	20.4	29.2	Kb
7.5		38.3	59.7	K
9.3		54.6	51.8	
9.0	55	3.5	8.6	
9.5		11.9	12.4	
9.3		18.6	23.0	
9.0		19.1	39.3	R
9.5		59.6	44.8	
9.0	56	5.2	30.9	
9.5		23.1	26.8	
*9.5		41.2	43.7	
9.5	57	45.0	29.1	
9.5	58	22.3	28.8	
9.1		26.4	44.9	b
9.5		55.8	46.5	
9.5	59	21.0	1.2	
9.3		45.7	25.3	
9.5	0	0.6	5.3	
9.5		1.5	15.4	
9.5		30.2	3.7	
9.4	1	1.0	12.9	
9.4		5.9	20.7	
9.5	2	13.6	39.3	
9.5		21.9	43.3	
8.3		22.0	25.5	Kb
9.5		33.5	59.0	
8.6	3	20.1	38.9	L
9.0		44.3	12.3	K
9.5		49.9	43.3	
8.9		58.8	5.2	
9.0	4	45.2	11.6	K
8.3	5	3.7	10.2	K
9.5		9.3	15.8	
9.5		41.7	11.9	
9.5		41.9	48.7	
9.5		49.2	14.5	
7.6	6	25.5	36.2	K
9.4		28.6	1.3	
9.5		40.9	5.5	
9.5	7	3.2	49.8	
9.2		9.4	2.9	K
8.9		10.9	33.6	K
9.3		23.5	6.3	B
8.3		37.0	43.0	
9.5		38.9	21.3	
8.0	8	37.2	43.0	K
9.4		46.5	56.3	
9.5		50.9	29.0	
9.5	9	34.7	49.2	
9.3	10	17.2	32.7	
9.4		53.0	42.1	
8.7	11	10.8	31.5	
9.2		12.9	21.3	
9.5		26.2	56.3	
9.0		32.6	18.3	K
9.5		52.5	53.5	
9.5	12	35.7	46.1	
10pr.		+ 32.12	+ 2.87	

321—380

	2ᵘ		+11°	
m	′	″	′	
9.5	12	36.7	28.1	
9.5		42.5	34.7	
8.9	13	27.8	4.3	Kb
9.5		54.9	7.6	
9.5	14	2.7	29.2	
8.5		3.6	36.1	
9.5		13.2	48.1	
9.5		36.4	2.3	
9.4		51.1	53.1	
9.5	16	9.9	35.4	
9.4		12.4	19.0	
8.8		13.4	14.2	
9.5		57.5	28.9	
9.5	17	13.7	35.7	
7.3		46.0	20.2	L
8.5		59.2	52.3	
9.0	18	10.2	15.9	
9.5	19	17.7	58.0	
8.8		18.0	24.9	K
8.7		59.2	48.5	K
9.4	20	36.3	43.2	B
9.5		38.3	41.9	B
9.4		38.7	43.0	B
9.5	21	3.7	37.7	
8.0		7.2	21.4	L
9.1		30.0	35.9	K
9.5		43.9	41.9	
9.3		46.4	55.2	
9.4	22	37.6	24.0	
9.3	23	15.4	34.3	
9.3		27.0	52.5	
9.1		39.7	36.3	K
9.5	24	22.7	45.0	
7.2	26	12.0	32.9	L
8.6		32.6	10.9	
9.5	27	17.6	40.2	
9.5		29.6	42.3	
8.7	28	15.2	28.8	
9.0		39.4	29.4	
5.1		44.1	49.9	Lb
9.1		50.7	1.1	Bb
9.5	29	10.2	39.2	
9.2		47.8	21.5	
9.1		48.0	44.8	
7.3		55.0	38.6	L
8.9	30	29.3	8.0	K
9.1	31	46.7	15.0	Bb
9.4	32	6.2	16.2	
9.5		9.4	7.8	B
9.4		26.5	37.4	
9.0	33	17.8	50.1	
9.3	34	44.8	31.1	
9.2		47.2	40.8	b
9.5	35	15.0	50.4	
8.0		56.7	25.3	K
9.3	36	26.1	58.0	
5.2	37	3.4	54.0	K
9.5		24.7	57.7	
9.5		38.0	3.7	
9.5		43.1	27.2	
10pr.		+ 32.31	+ 2.71	

381—440

	2ᵘ—3ᵘ		+11°	
m	′	″	′	
9.5	38	2.1	55.3	
9.0		12.6	22.6	
8.8		22.6	10.4	
9.1		39.8	54.4	
8.1	39	0.6	39.3	Kb
8.7		7.1	50.3	K
8.6		7.9	49.1	K
9.5		36.0	38.7	
9.5		39.6	57.3	B
9.5		51.8	23.0	B
9.1	40	8.4	14.2	
9.3		22.1	17.0	
9.5		34.1	2.2	
9.5		34.2	35.6	
8.8		55.8	48.5	
9.5	41	34.4	31.1	a
8.6		51.0	32.0	R
8.4	42	27.4	0.9	K
8.5		38.2	16.3	K
9.5	43	2.4	46.0	
9.5		4.9	45.4	
9.5	44	1.0	42.5	
9.5		27.5	35.7	
9.5		29.0	14.7	
9.5		54.2	20.6	
8.8	45	26.0	24.6	K
9.0		34.0	43.2	K
9.3	46	51.5	6.8	
9.4	47	57.6	32.6	
9.3	48	6.8	48.5	b
9.5		29.4	23.9	
9.5		56.2	38.2	
9.5	49	3.2	14.4	
9.5	50	0.5	22.7	
9.5	51	7.7	10.1	
9.4		20.8	35.4	
9.4		26.2	26.2	a
9.4		34.5	59.3	
9.0		56.7	23.4	K
9.1	52	55.0	22.5	
9.0	53	6.8	7.3	
9.0		41.4	31.2	
9.5		51.2	42.6	
9.5	54	48.4	46.5	
9.2	55	12.7	6.7	a
9.3		55.8	25.6	
9.3	56	10.4	51.7	B
9.5		23.2	1.4	
8.8	57	0.2	7.9	
8.9		15.2	35.7	
9.2		16.2	49.1	
9.5	58	4.8	31.0	
8.9		18.2	21.6	
7.5		24.0	6.0	Kb
9.3		33.9	8.2	
8.8		34.5	4.6	K
9.5	59	1.8	57.6	
9.3		10.2	22.5	
8.5	0	43.2	49.0	R
9.5		54.2	43.7	
10pr.		+ 32.54	+ 2.48	

441—500

	3ᵘ		+11°	
m	′	″	′	
9.5	1	11.7	34.7	
8.8		15.4	54.5	Kb
9.3		43.8	56.2	
9.0	2	16.6	30.0	K
6.5		44.4	19.8	K
9.4	3	9.5	28.0	
9.5		16.6	47.7	
8.9	4	5.7	8.4	
9.4		22.3	58.9	
9.5		44.0	39.8	
9.2	5	24.1	0.6	Kb
9.5		36.2	7.8	
9.5	6	39.0	43.8	
9.0		58.3	54.2	Kb
9.4	7	24.9	7.2	B
8.0	8	7.0	5.0	K
9.5	9	13.7	14.0	
9.5	10	59.0	54.0	
8.3	11	16.3	55.1	K
9.0		41.3	29.5	
9.5	12	1.8	5.6	
7.5		36.3	49.3	Kb
8.8	13	47.5	34.4	K
9.4	14	35.0	39.4	
9.5	15	29.3	41.0	
9.2		56.8	19.3	aB
8.6	16	19.4	20.5	
9.5		47.0	46.8	
7.7	17	12.7	58.8	K
9.5		13.9	0.4	
9.1		22.0	27.8	
9.0		48.9	1.6	
9.5		56.3	35.5	
8.2	18	11.5	58.1	K
9.0		26.7	28.5	
9.5	19	9.0	54.7	
9.5	20	37.7	44.1	B
9.5		40.0	43.6	B
9.0	21	3.6	14.5	
9.5		31.2	31.9	
9.0	22	3 3	47.3	
9.5		31.7	34.5	
9.0		34.9	1.8	K
9.0		39 2	22 4	
9.5		59.3	45.7	
9.5	23	5.1	5.8	
7.3	24	15.9	3.1	K
8.5		26.6	52.3	K
9.4		44.2	37.8	
9.5	25	39.0	37.6	
9.3		40.6	55.5	
9.5	26	45.9	43.9	
9.3		59.4	22.0	
9.5	27	20.5	23.1	
9.5		36.0	35.6	
8.7	28	28.5	31.7	Kb
9.0		40.3	59.6	
9.2		54.2	57.5	aR
9.5	29	7.6	54.6	
9.5		57.2	12.7	
10pr.		+ 32.78	+ 2.18	

274a
var | 56 51 | 49.7 |

m	3ᵐ	+11°		m	3ᵐ–4ᵐ	+11°		m	4ᵐ	+11°		m	4ᵐ–5ᵐ	+11°		m	5ᵐ	+11°	
	801–860				861–920				921–980				981–1040				1041–1100		
9.3	30 19.0	14.5	*b*	9.5	53 51.1	46.2		9.5	24 6.5	15.7		9.5	48 24.0	2.0		8.8	4 2.6	20.3	
9.5	32 1.0	47.3		9.1	54 3.2	34.9	*b*	9.4	35.6	54.5	B	9.5	46.7	53.4		8.4	17.7	10.4	K
9.5	5.7	38.6	*R*	9.5	44.3	5.2		9.5	44.4	54.3	B	9.3	46.7	4.1		9.2	5 2.1	19.7	*a*
9.2	22.5	14.8	K	9.2	55 2.6	59.6		9.5	25 3.0	34.1	*b*	9.3	49 18.3	26.1	*Bb*	9.5	18.2	22.7	
9.2	25.7	29.4	*Rb*	8.8	29.0	5.5	*Kb*	9.5	6.0	32.9	B	9.4	20.7	16.8	B	9.5	40.0	38.3	B
9.5	33 2.0	6.5		9.5	56 4.6	10.6		9.5	39.0	22.4	B	9.5	24.0	29.1		8.6	54.1	18.2	
9.1	18.5	49.6	*Bb*	9.1	4.6	0.4		8.3	26 42.3	10.6		9.5	26.1	54.7		8.1	6 5.8	54.0	K
9.5	25.2	51.6		9.5	40.0	39.3		9.5	45.3	44.9		9.5	55.9	3.6	*a*	8.7	13.9	18.3	
9.5	34 5.0	49.0		9.5	57 3.5	26.8		8.9	27 29.9	47.3	K	9.5	50 45.0	57.8		9.5	15.8	47.4	
8.6	54.2	29.9	K	9.3	51.4	34.0	*Bb*	9.5	50.6	45.3		9.0	46.4	43.6		9.3	28.0	59.7	
9.5	35 1.6	19.7		7.6	59 10.8	52.6	K	9.2	28 1.4	53.1		9.5	47.3	40.8	*a*	9.0	40.2	13.4	
9.5	13.3	25.0		9.5	31.7	28.2		6.7	19.5	7.0	K	9.3	51 7.6	10.6		9.5	58.5	15.6	
8.8	36 2.9	22.7	K	9.5	33.7	32.5		9.5	37.0	36.5		9.3	26.8	21.5		9.3	7 44.6	53.2	
8.9	48.5	27.9	K	9.5	0 17.9	37.6		9.5	29 9.1	54.9		9.3	34.4	6.9		9.2	49.9	53.6	
9.0	37 22.6	53.6	K	9.5	25.5	37.6		9.5	30 43.0	55.3		9.5	41.0	54.9		9.4	51.3	47.9	
8.8	38 38.2	4.5		8.5	27.8	57.5	K	8.5	52.9	42.1		9.5	50.0	37.1		6.0	8 1.2	10.1	*Kb*
8.5	52.0	13.0		9.5	54.4	49.0		9.5	31 0.0	56.0		9.3	52 27.1	6.9		9.5	6.8	34.6	
9.5	39 8.5	0.5		9.5	1 16.0	57.5		9.5	36.9	17.8		9.5	44.0	44.5	B	9.5	9.9	40.6	
9.0	23.1	58.8	K	9.0	38.8	4.9	B	6.0	32 1.4	55.2	K	9.2	53 3.1	11.4	*a*	8.8	43.3	17.3	
9.5	26.0	0.6		8.7	2 17.8	6.1	B	9.5	33 43.6	48.4		9.0	5.2	55.8		9.2	9 11.7	50.3	
9.5	33.5	0.5		8.5	18.7	41.4	*Kb*	9.5	34 2.6	33.8		9.5	29.7	55.8		8.1	21.3	34.0	*Kb*
9.5	37.0	0.0		9.5	58.6	3.1		9.5	25.0	7.0	*b*	7.5	46.4	10.7	K	9.4	10 2.9	4.0	K
9.5	52.5	22.2		7.0	6 14.2	58.4	K	7.8	44.1	55.2	K	9.5	54 38.8	24.2		8.2	30.8	55.7	
9.5	40 21.9	32.7		9.5	28.2	22.6	*b*	9.5	37 22.0	48.4		7.5	55.4	50.2	K	9.5	40.9	3.1	
9.5	38.5	33.4		9.5	7 24.8	50.4		9.4	48.3	34.4	K	9.5	55 12.1	23.6		9.5	11 11.2	19.4	
8.6	53.0	15.4	K	9.5	55.1	26.7		5.7	59.5	26.5	K	9.5	21.0	6.5		9.4	12.4	58.2	B
9.1	41 9.1	12.1	K	9.5	55.3	44.0		9.5	38 7.2	57.8		9.4	28.8	13.8		9.5	27.8	15.9	
9.5	42 8.4	26.0		9.5	8 33.4	58.7		9.5	19.3	41.8		9.5	33.0	35.8		9.4	28.5	39.0	
9.4	51.9	22.1	K	8.9	54.6	7.2		9.0	54.2	0.8	K	9.5	43.4	49.3		9.5	35.9	44.1	
8.8	43 26.5	37.3	K	9.5	9 53.4	25.7		9.5	59.9	48.2		9.5	56 23.4	56.9		9.1	39.0	54.1	
9.5	44 4.0	33.5		8.9	10 58.5	54.9		9.0	39 35.1	31.2		9.5	27.6	26.5		9.3	56.4	24.4	
9.1	15.4	23.1	*b*	7.5	11 28.8	36.5	*B*	9.5	40 0.4	10.6		9.0	55.4	38.5	*Kb*	8.7	12 21.0	27.9	K
9.1	22.3	56.1	*b*	9.5	12 3.0	0.6		9.5	37.5	59.2		9.5	58 4.4	9.0		9.5	45.0	4.5	
9.4	49.0	30.4		9.1	18.8	0.3	*Kb*	9.5	58.8	25.0		8.9	19.6	48.5	K	8.1	52.0	32.7	K
9.3	45 35.9	57.8		9.4	25.4	29.5		8.3	41 6.8	35.0	K	9.5	39.2	23.5		9.5	13 17.6	49.6	B
9.5	46 12.6	58.6		9.5	41.1	5.1		9.5	16.8	14.8		8.8	53.3	37.9	K	9.4	30.1	49.4	B
9.5	38.8	55.0		9.5	53.7	56.6		9.3	22.1	14.4	K	9.5	54.2	50.7		9.5	37.9	21.7	
9.5	47 53.5	13.8		9.5	13 6.8	47.5		9.5	42 27.0	57.5		9.5	59 3.8	28.8		9.5	14 16.8	53.9	
9.5	48 2.8	53.6		9.3	58.8	12.9		9.5	59.3	15.7		9.5	33.0	40.1		9.5	23.5	41.3	
9.4	34.0	35.0		9.5	15 10.8	35.0		9.5	43 12.5	15.7		9.5	0 12.3	31.5		9.4	31.8	1.4	
9.3	49 3.6	55.2		6.8	16.6	2.6	K	9.5	23.0	25.8		9.4	13.3	59.9		9.5	35.3	43.5	
9.3	29.1	56.3		8.5	42.3	10.5	K	9.3	38.7	34.7		9.4	19.9	42.7		8.5	55.6	15.7	K
8.5	36.8	4.3	K	9.3	16 5.6	10.3		9.5	52.5	27.7		9.5	33.7	25.4		9.4	55.8	49.3	
9.4	47.0	50.1		7.0	12.7	49.3	K	9.5	44 0.0	25.7		7.1	41.9	34.1	K	9.5	59.5	21.3	
9.2	52.2	9.4		9.5	52.0	55.4		9.3	21.1	7.6		9.5	1 0.2	46.5		9.5	15 7.1	25.3	
9.4	50 3.5	29.3		8.3	58.5	38.7	*Kb*	9.5	24.4	37.1		9.5	5.6	40.2		8.9	10.0	17.8	K
9.5	22.5	1.0		9.5	17 31.6	49.5		9.3	40.1	29.4	*b*	8.0	8.0	18.1	K	9.0	14.8	17.2	K
8.8	27.4	42.1	*Kb*	9.5	50.5	35.4		9.2	57.5	1.4	*R*	8.0	11.0	17.9	K	9.4	21.2	39.0	
9.0	36.6	50.8		9.5	59.3	35.1		9.1	58.7	1.5	K	9.5	19.9	7.2		9.2	16 1.0	15.3	
9.1	51 6.2	13.7		9.4	18 18.2	42.9	B	9.5	46 10.2	9.1		9.1	20.0	48.5		9.2	1.3	31.2	
9.0	27.2	22.4	K	9.4	28.3	42.1		8.3	36.6	41.9		8.7	43.6	36.7	K	9.5	10.7	23.8	
9.0	40.0	2.7	K	9.2	19 8.6	59.9	K	7.5	37.4	48.4	*B*	9.5	44.1	5.5		9.5	19.3	56.9	
9.4	47.7	33.7	B	9.2	20.3	15.8		9.3	38.1	52.0	?	9.5	57.0	59.5		7.0	38.6	24.4	K
8.3	49.3	7.8	K	7.5	43.2	25.9	*Kb*	8.5	43.1	41.5	K	9.5	2 27.3	19.2		9.5	41.1	13.2	
9.5	52 4.5	50.5		9.0	54.9	44.4		6.3	46.1	11.1	*Lb*	9.5	35.3	35.4		8.4	43.6	34.1	
9.3	6.2	28.2		8.0	20 22.4	20.4	K	9.3	52.4	42.3		9.5	41.5	53.8		9.3	52.0	5.9	
9.5	39.4	39.3		9.5	52.4	1.6		8.8	47 10.1	32.9	K	9.5	51.4	22.0		9.5	55.4	25.1	
9.4	58.8	48.1	B	8.2	21 37.4	51.2	K	9.5	12.4	57.2		9.5	3 16.0	55.6		9.2	17 4.2	42.5	
9.5	53 2.0	44.6		9.5	57.7	4.2		9.3	29.0	56.0		9.5	32.7	20.3		9.4	5.5	46.4	
9.5	28.5	20.0		9.5	22 10.1	16.4		8.7	48 1.8	0.4	*Kb*	8.7	42.5	34.0		9.5	44.9	57.5	
	+	+			+	+			+	+			+	+			+	+	
10pr.	*32.97*	*1.87*		*10pr.*	*33.14*	*1.54*		*10pr.*	*33.28*	*1.15*		*10pr.*	*33.34*	*0.92*		*10pr.*	*33.38*	*0.69*	

801—860				861—920				921—980				981—1040				1041—1100			
	5ᵘ		+11°		5ᵘ		+11°		5ᵘ		+11°		5ᵘ—6ᵘ		+11°		6ᵘ		+11°	
m		′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.8	17	56.3	35.8		8.9	26	51.0	3.4	9.5	35	56.9	7.6	9.3	49	54.8	10.7		9.5	0	41.7	45.7	
8.7	18	14.5	26.4	K	9.5		58.4	5.0	9.5	36	2.1	0.0	9.1	50	12.3	4.7	*b*	9.2		53.1	30.2	*a*
9.3		21.7	34.0		9.3	27	3.6	23.8	9.5		9.0	16.0	9.3		17.6	37.6		9.1		58.8	24.6	
9.3		24.3	49.8		9.5		14.7	29.5	9.5		10.2	42.1	9.5		39.5	36.3		8.1	1	5.0	41.2	*S*
9.2		28.3	19.2		9.0		29.1	50.6	K	9.3		15.8	6.0	9.5	51	10.2	3.2		9.0		6.5	28.3	
9.3		33.3	8.4		9.5		32.0	58.4		9.3		16.8	45.0	8.6		14.7	44.7	P	9.5		42.8	58.0	
8.1	19	5.8	23.9	*B*	9.0		34.7	40.7		9.5		19.3	36.1	9.4		19.1	8.8		8.5		48.3	23.5	
9.5		16.9	28.4		8.8		38.0	52.0	K	9.5		32.7	36.4	9.5		19.3	29.6		9.2	2	9.7	33.9	
9.5		34.5	17.7		9.0		40.8	9.1		9.0		36.0	20.8	9.5		22.5	49.5		8.3		17.6	40.9	L
8.2		35.9	20.8	*Bb*	9.2		42.5	40.9		8.5		44.3	44.3	8.9		24.4	59.7		9.0		23.0	38.7	
9.5		44.0	6.5		9.2		43.4	16.4		9.4		44.8	14.6	9.4		42.1	11.6		8.9		27.8	17.7	
8.9		45.3	36.2		9.5		46.5	54.2		9.4	37	0.6	37.1	9.3	52	8.5	51.3		9.0		28.7	21.6	
8.8		49.1	29.3		9.3		49.0	25.7		9.4		16.4	6.8	9.4		17.6	55.5	*aB*	9.2		38.3	51.7	
9.2		57.9	59.2		9.5	28	0.7	39.5		9.2		21.7	31.5	9.5		19.7	49.8		9.2	3	23.2	14.3	
9.5	20	0.1	5.3		9.4		9.3	43.3		9.4		34.0	15.7	8.5		28.0	57.8		9.0		35.5	45.0	K
9.0		27.0	54.6		9.2		14.5	54.7	K	9.4		39.1	1.9	8.6		48.8	43.4		9.5		45.3	9.6	
9.4		32.4	34.8		9.4		15.1	36.9		9.1		42.0	22.8	9.4	53	9.2	28.3		9.5		48.6	33.5	
9.5	21	1.0	17.0		9.0		24.4	14.1		9.5		43.8	41.8	9.5		22.1	53.8		9.0		50.3	2.8	
9.2		1.7	44.5		9.2		36.0	4.0		9.5	38	10.3	57.1	9.5		31.3	1.5		7.9		58.1	32.7	*B*
9.5		15.6	43.3		8.3		38.5	45.0	K	9.1		50.6	9.2	K	9.2		47.4	15.3		8.5	4	0.2	45.1	K
9.5		22.3	14.2		9.5		40.5	9.8		9.3	39	6.0	53.4		9.2		54.7	40.8		9.1		28.0	5.0	
9.5		41.2	31.9		9.3		46.1	13.6		9.3		28.3	40.4	B	8.4		59.1	39.0	B	9.5		33.1	3.4	
9.5		53.7	18.5		9.5	29	15.1	1.6	K	8.6		58.9	1.7	K	8.9	54	13.5	36.8	K	8.9		37.0	52.0	
9.3	22	1.5	13.8		9.0		17.1	40.8	K	9.1	40	23.0	40.0		9.2		27.5	0.1	K	8.6		40.9	29.4	
9.2		4.8	35.3		9.5		27.3	46.4		7.5		40.9	56.3	K	8.7		38.5	4.9	K	9.5		41.5	11.3	
9.5		5.8	55.2		9.4		55.5	39.8		9.5		52.4	19.7		9.2		55.1	5.7	K	9.1		51.4	8.7	
9.2		6.9	41.0		9.4		56.9	43.5		9.4		59.1	7.6		8.2	55	13.8	8.5	K	9.2		54.6	9.6	
9.5		9.1	18.4		9.5	30	9.7	28.6		9.5	41	12.0	46.5		8.5		18.3	5.3	K	9.5		59.0	31.4	
9.3		14.7	13.1		9.5		13.8	52.2		8.7		52.4	40.9		6.5		19.0	40.7	L	9.3	5	8.8	57.0	
9.5		31.2	15.3		9.5		19.4	18.1		9.5	42	11.0	37.0		9.5		32.1	46.3		9.4		45.5	9.6	
9.5		34.3	55.2		9.4		21.0	30.2		9.3		16.5	53.3		8.8		39.6	28.9		9.4		55.7	1.8	
9.5		35.6	30.3		9.2		38.4	11.7	*b*	9.1		31.5	26.3	K	8.3	56	5.4	1.2	K	9.3		59.0	21.5	
8.7		38.3	46.4		9.5		43.6	2.4		7.0		57.9	27.2	K	9.3		22.5	11.6		9.4	6	5.4	25.3	
7.6		55.6	58.8	L	9.5		55.4	33.5		8.6	43	2.5	0.6	K	9.5		28.5	4.9		9.3		15.9	0.6	
9.5		59.8	14.6		9.1	31	11.3	7.9		9.3		58.3	8.4		9.3		37.8	29.9		8.0		20.7	51.4	K
9.0	23	24.0	56.4		8.6		18.3	45.1		9.5	44	15.3	54.3	B	9.3		50.3	45.8		7.6		25.5	50.5	K
8.7		50.4	5.2	K	9.1		19 8	56.6		9.4		23.0	55.6		9.2		59.0	20.6		9.2		25 9	37.1	
8.6		54.3	10.5	K	8.0		22.5	25.7	*B*	9.1		45.1	37.1		9.4	57	1.7	1.0		9.0		30.6	6.4	
8.7	24	0.9	7.2	K	8.2		26.2	55.6	*B*	9.4	45	5.9	11.0		9.0		18.7	43.2	K	9.3		44.3	53.4	
8.8		4.0	7.2	K	9.5		43.4	19.9		7.5		6.9	47.2	L	9.5		22.2	56.7		8.3		49.3	41.5	K
8.9		8.6	48.6		8.8	32	0.9	4.6		9.2		17.0	24.7		9.5		29.0	16.8		9.5		55.2	14.1	
9.0		8.9	43.5		8.7		6.1	21.3		9.5	46	5.5	41.8		8.2		38.1	13.4	*B*	9.5	7	23.4	59.8	*a*
9.4		13.5	44.0		8.8		23.4	46.9	K	9.5		21.5	37.2		8.9		49.0	39.1	Kb	9.5		28.0	22.1	
9.3		22.4	58.3		9.5		28.0	40.8		7.2		26.6	44.4	L	9.5	58	17.9	25.4		9.5		29.3	28.3	
9.5		41.1	5.9		9.4		35.0	38.8		7.9		31.0	27.7	L	9.2		30.7	11.0		9.5		34.1	52.2	
8.9		53.1	34.0	K	8.8		56.0	26.8	K	9.2		37.9	54.4		9.2		32.7	36.1		9.5		47.2	31.9	
9.5	25	4.8	18.9		9.5	33	2.1	23.7		9.5	47	4.8	34.6		9.2		40.9	58.8		9.2		47.3	14.7	*a*
8.3		7.6	5.6	K	9.3		8.6	59.9		9.0		6.9	24.7		9.1	59	13.1	49.1		9.5		49.2	4.5	
9.5		36.7	50.0		9.5		24.0	36.8		9.4		29.4	42.4	B	9.2		17.9	29.5		9.5		50.0	9.9	
9.5		47.7	35.7		9.0		34.7	11.5		8.5		31.4	46.9		9.5		25.5	6.5		8.7	8	0.0	59.4	K
9.3		47.8	46.9		9.1		48.3	5.0		8.2		57.5	29.8	L	9.1		27.6	38.1		9.5		2.8	31.6	
9.5		53.5	1.9		9.3		57.0	19.6		9.0	48	8.6	12.8		7.8		33.6	1.2	L	8.9		5.4	36.0	
9.0		58.9	13.3		9.5	34	12.2	35.1		9.2		16.1	45.4		9.4		43.9	1.0		9.3		6.2	34.3	
9.3	26	8.2	11.3	*a*	9.4		14.4	38.5		8.5		28.5	1.0		9.5		50.0	8.0		8.7		7.3	15.5	
9.1		11.7	36.6		9.3		24.8	40.7		6.5		44.2	29.7	L	9.4		52.0	38.8		9.4		14.5	19.9	
8.9		11.7	53.2	K	9.5		37.0	25.9		9.5	49	0.0	40.6		9.0	0	5.1	15.6		8.8		16 0	30.2	
9.3		12.6	32.8		9.2		41.4	11.4		8.6		12.6	25.4		9.0		15.2	29.5		9.5		31.4	28.3	
9.5		26.0	1.0		9.5	35	10.4	23.2		9.2		14.4	42.7		8.8		17.7	24.7		9.5		36.2	59.4	
9.5		27.1	35.1		9.5		12.4	29.5		9.2		24.9	57.1		9.5		30.0	59.6		9.1		38.1	9.5	
9.5		47.3	47.3		8.0		46.8	20.2	L	9.4		32.1	11.4		9.5		40.5	56.2		9.4	9	30.3	14.8	
		+	+				+	+				+	+				+	+				+	—	
10pr.		*33.41*	*0.54*		*10pr.*		*33.42*	*0.44*		*10pr.*		*33.43*	*0.26*		*10pr.*		*33.44*	*0.07*		*10pr.*		*33.44*	*0.09*	

+11°

1101—1160

	6ᵘ	+11°	
m	′ ″	′	
9.4	9 32.7	11.9	
9.3	34.6	24.0	
9.3	38.4	47.3	
8.5	41.2	5.3	
9.3	55.7	15.1	
9.3	10 21.2	17.9	
9.5	26.5	36.2	
8.5	33.8	40.9	K
9.3	40.6	30.2	
7.8	45.6	12.9	K
8.9	46.6	7.0	K
9.5	11 4.7	4.4	
9.5	17.3	26.0	
9.5	23.0	37.7	
9.5	25.1	59.1	
9.2	27.2	14.6	
9.5	33.3	26.2	
8.5	38.8	3.8	K
9.5	50.7	51.0	
9.5	52.9	58.4	
9.1	56.0	9.8	
9.5	56.0	26.1	
9.4	56.4	46.6	*a*
9.0	12 9.8	7.0	
9.5	33.8	34.9	
9.4	38.9	20.0	
9.5	43.6	14.1	
7.5	46.1	49.0	Lb
8.5	49.4	39.0	L
9.5	52.3	40.9	
9.2	56.0	39.8	
9.5	13 1.9	20.7	
9.5	1.9	28.1	
9.1	6.8	4.8	K
9.5	19.3	7.0	
9.5	26.5	15.0	
9.2	52.2	18.0	
8.4	54.4	2.1	K
9.2	14 6.0	2.2	
9.4	13.6	41.2	
9.5	14.6	52.6	
9.3	17.5	5.7	
9.4	33.8	48.4	
9.5	43.8	58.8	
9.4	44.6	44.8	
9.5	55.6	54.2	
9.4	15 2.5	12.5	
9.0	13.9	33.8	K
8.9	19.3	17.0	
9.2	31.7	51.4	
8.0	33.9	0.3	K
9.1	44.6	35.2	
9.4	52.3	6.1	
9.3	16 4.6	25.7	
9.5	11.2	46.4	
9.2	17.7	32.0	
8.7	27.8	33.8	
9.5	28.8	39.0	
7.5	31.1	19.6	L
8.4	33.8	7.1	B
	+	—	
10pr.	*33.44*	*0.19*	

1161—1220

	6ᵘ	+11°	
m	′ ″	′	
9.3	16 45.0	32.3	
8.0	17 7.5	45.8	B
8.0	17.3	18.5	L
8.5	32.8	16.4	L
9.3	34.2	13.9	*a*
7.9	37.4	18.4	L
9.3	42.2	32.5	
9.3	46.1	19.2	
7.5	49.2	12.3	K
9.1	18 4.9	34.7	
8.6	15.0	4.0	K
9.5	17.1	36.7	
9.5	17.5	32.2	
9.3	29.6	54.0	
8.9	30.6	42.7	
9.3	38.8	54.8	
9.4	42.9	36.3	
8.5	45.4	43.8	
9.0	47.5	1.2	K
9.5	19 8.2	23.5	
9.5	9.3	21.0	
9.3	21.1	20.7	
9.3	34.0	29.1	
9.5	36.2	9.0	
9.1	37.3	50.7	K
9.5	45.0	54.8	
9.5	52.7	42.4	
9.0	20 16.7	48.4	K
9.1	17.8	12.4	
8.9	23.4	2.0	
8.9	34.9	23.3	
9.1	52.5	33.9	
7.1	57.3	6.5	L
8.8	57.8	26.8	
9.5	21 0.0	44.2	
9.5	7.7	7.2	
8.3	8.0	2.0	L
9.3	10.2	34.1	
9.5	13.0	42.0	
8.8	34.1	47.1	K
9.2	56.8	40.6	
9.5	22 17.9	28.5	
9.3	31.6	8.8	
6.8	23 4.8	20.7	K
9.2	4.9	21.3	K
9.1	11.1	37.6	
7.1	34.6	53.6	L
8.7	37.8	12.1	Kb
5.5	43.4	38.4	K
9.3	48.9	17.7	
9.5	56.6	14.3	
9.4	59.9	42.1	
7.0	24 17.9	46.7	K
8.6	38.0	40.7	K
9.5	25 0.5	33.5	
9.2	7.1	37.7	K
9.4	24.7	49.4	
9.3	31.8	36.8	
9.2	38.4	19.0	
9.2	39.5	16.9	
	+	—	
10pr.	*33.43*	*0.30*	

1221—1280

	6ᵘ	+11°	
m	′ ″	′	
9.1	25 39.6	20.7	*b*
9.4	43.5	9.2	
8.7	54.1	30.4	K
9.5	26 10.7	5.9	
9.4	11.0	20.5	
9.3	12.6	41.0	
9.2	19.9	12.8	
9.5	25.8	6.5	
9.5	40.2	1.1	
9.4	49.8	15.4	
9.5	54.0	1.4	
8.2	57.4	14.0	K
9.3	57.7	12.3	
9.4	27 2.0	58.0	
9.3	8.3	56.7	
9.4	14.8	39.0	
8.6	17.2	35.2	K
8.7	34.1	50.0	K
9.1	42.4	50.2	K
9.0	57.0	26.8	
9.5	28 3.6	44.5	
9.4	6.2	44.4	
8.4	31.5	58.6	K
9.5	37.2	53.0	
9.5	55.9	40.8	
9.5	56.0	59.2	
9.5	59.1	36.5	
9.2	29 7.3	44.6	
8.2	19.7	14.5	*B*
9.3	37.9	20.6	
8.9	47.6	48.4	K
8.4	56.5	48.4	K
8.8	30 9.6	0.6	B
9.5	25.8	36.9	
9.3	39.4	17.8	
9.5	31 0.1	30.7	
9.3	12.7	59.6	
9.3	30.8	33.5	
9.0	38.6	37.8	
9.0	42.8	18.8	
9.5	48.0	6.1	
9.1	50.9	34.9	
8.1	51.1	48.7	*B*
9.1	32 8.1	39.4	
9.5	12.9	6.4	
9.5	13.3	45.7	
8.3	19.8	19.7	K
9.5	27.7	6.4	
9.2	37.0	20.2	
9.2	45.2	28.8	
9.0	33 10.0	20.2	
8.4	13.3	50.8	
6.9	14.9	7.9	K
8.7	23.8	32.0	
8.4	37.4	1.5	K
9.2	49.3	47.7	
9.0	34 0.4	37.8	
8.7	14.4	37.6	K
9.5	33.5	39.7	
8.1	37.9	54.0	K
	+	—	
10pr.	*33.42*	*0.44*	

1281—1340

	6ᵘ	+11°		
m	′ ″	′		
8.6	34 57.9	8.9		
9.3	35 3.6	12.5		
9.5	15.5	18.1		
8.7	29.4	17.7		
9.5	35.8	3.3		
9.5	36.2	58.5	B	
8.6	43.6	18.9		
9.3	46.8	26.8		
8.6	52.5	54.7	Kb	
9.3	59.8	23.4		
9.5	36 38.3	36.9		
9.4	40.4	44.1		
9.4	37 16.3	33.1		
8.6	18.9	43.2		
9.0	26.8	31.2		
9.2	42.2	53.1		
9.3	38 7.1	57.6		
9.3	9.0	36.7		
9.5	36.7	27.0		
9.3	39.9	5.7		
9.3	58.0	4.2		
8.3	59.7	12.0	K	
8.7	39 14.3	4.1	K	
9.2	17.3	4.4	K	
9.1	21.4	55.6	*b*	
9.5	44.8	22.3		
8.2	56.0	38.2	K	
9.5	40 19.7	59.0		
9.5	45.0	37.5		
9.4	46.5	23.3		
9.4	47.1	40.7		
9.4	52.3	19.1		
9.4	41 3.2	44.9		
9.5	7.0	38.2		
9.4	9.1	13.6		
9.2	18.5	16.7		
9.3	28.8	19.2		
9.2	54.4	27.8		
9.2	54.9	1.9		
9.1	42 8.1	30.7	*b*	
8.9	9.3	26.3		
9.5	16.7	2.5		
9.3	18.7	44.9		
9.4	24.4	56.9		
9.5	27.9	28.9		
9.1	35.7	6.2		
7.7	49.4	49.7	L	
8.9	43 30.0	45.7		
8.5	35.6	34.6		
9.5	44.4	12.2		
9.4	47.5	31.9		
8.8	56.4	42.0		
8.0	44 15.3	29.8	*B*	
9.4	25.1	29.1		
8.0	32.9	45.6	*B*	
8.5	35.8	29.4		
9.3	36.4	38.3		
9.1	38.0	59.3		
9.4	49.0	52.0		
9.3	53.8	24.3		
	+	—		
10pr.	*33.40*	*0.59*		

1341—1400

	6ᵘ	+11°	
m	′ ″	′	
9.5	45 14.9	50.4	
9.5	17.4	42.7	
9.4	19.7	56.9	
6.8	20.2	10.4	L
9.5	24.1	53.0	
9.5	42.0	4.6	
9.5	44.8	0.6	
9.3	48.7	29.5	
8.5	51.8	51.1	K
8.0	51.8	11.7	K
9.3	53.0	17.9	
9.2	56.6	35.1	
8.8	59.9	45.8	K
9.2	46 25.7	16.8	
8.1	26.1	14.1	K
8.3	43.3	36.8	
9.5	47 2.6	5.7	
9.5	7.2	8.4	
9.4	20.7	34.8	
9.5	22.5	40.0	
9.4	30.0	54.9	
9.4	39.8	57.5	*a*
8.8	49.8	20.0	
9.4	48 1.6	45.6	
8.8	2.5	6.7	K
9.5	4.8	49.1	
9.5	15.0	36.8	
8.3	17.2	12.5	K
8.5	33.9	56.0	K
*8.0	46.0	35.1	K
9.5	52.4	30.1	
9.5	53.3	30.9	
9.2	49 9.1	11.8	
9.2	9.6	11.6	
8.6	11.3	20.6	
9.2	11.7	20.3	*a*
8.0	26.0	9.7	*B*
9.5	32.7	23.9	
8.7	50.2	25.4	K
9.5	58.0	58.6	
9.5	50 19.1	39.2	
9.5	22.0	12.3	
9.5	35.1	38.1	
9.5	36.4	10.6	
9.5	37.3	54.0	
9.5	45.6	44.1	
9.3	49.5	16.2	
9.5	52.8	32.4	
9.5	53.9	45.3	
9.5	58.0	22.8	
9.2	51 21.4	21.7	
9.2	21.8	19.4	
9.5	27.9	50.2	
9.5	29.9	24.8	
9.5	35.6	48.1	
8.9	37.0	5.0	
9.4	41.6	52.3	
8.0	47.0	59.8	L
9.5	48.6	7.8	
9.5	53.2	2.1	
	+	—	
10pr.	*33.38*	*0.76*	

1370ᵘ			
var	48	49	25.6

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ᵐ		+11°			6ᵐ—7ᵐ		+11°			7ᵐ		+11°			7ᵐ		+11°			7ᵐ		+11°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	52	10.3	26.0		9.0	59	52.0	6.1		9.4	7	46.3	10.1		9.5	17	15.0	1.0		7.8	32	2.2	24.7	K
9.5		10.3	11.8		9.5	0	1.4	23.1		9.5	8	0.2	4.3		8.6		18.6	57.2	K	9.5		37.3	10.1	
9.4		25.9	11.2		9.3		4.3	40.0		9.5		19.7	59.2		9.5		26.8	31.3		9.5	33	0.0	1.1	
9.5		29.2	8.6		8.6		6.0	14.2		8.9		40.5	36.8		9.5		29.1	37.3		9.5		13.6	36.2	
9.4		40.4	29.9		9.4		18.5	39.3		9.4		58.1	51.2		9.2		42.6	47.3	K	9.2		28.9	50.7	K
9.4		46.9	48.4		8.8		21.2	16.9		8.8	9	5.0	59.7		9.4		55.6	58.2		9.5		33.1	23.0	
9.5		50.7	0.0		7.5		28.6	9.1	K	8.0		10.9	22.9	K	9.5	18	23.3	37.2		9.5		40.6	18.1	
7.0	53	4.6	58.5	L	8.8		46.2	31.7		9.5		20.2	28.9		6.8		39.9	16.7	K	8.8		44.9	13.2	
9.1		21.0	58.2	K	9.5		50.7	48.1		9.5		22.3	17.0		9.0	19	24.7	15.3	K	9.0	34	1.3	1.3	K
9.4		25.4	12.5		9.5		57.0	58.1		8.7		25.8	50.0	K	9.5	20	29.4	36.9		9.2		4.4	30.6	
9.5		28.3	58.9		9.5		57.9	59.5		9.4		30.2	34.8		9.4	21	5.5	42.8		8.9		49.4	40.0	
9.5		38.2	36.3		9.3		59.0	21.2		9.2		32.3	58.1		7.5		10.2	52.8	L	9.2	35	9.8	36.2	K
9.5		52.1	31.2		9.5	1	6.3	39.8		9.1		35 3	4.9		8.3		16.5	19.2	L	9.0		20.0	32.9	K
8.5	54	4.9	16.5		9.5		8.8	36.7		9.4		36.9	48.1		8.5		22.9	50.0	S	9.2		26.2	49.1	
9.4		5.3	57.3	a	9.4		13.6	44.8		9.0		45.8	21.3		9.5		33.6	7.5		9.5		29.5	53.5	
9.4		27.4	38.4		9.5		14.2	1.8		9.3		50.0	26.0		9.5	22	2.6	32.0		9.3		31.4	6.6	
9.5		31.5	17.3		9.5		47.9	50.3		9.5		55.4	1.2		9.5		11.0	54.5		9.5	36	1.8	12.9	
9.2		30.3	38.9	b	9.4	2	2.5	26.2		8.5	10	12.8	40.9	K	7.5	23	7.9	29.9	K	9.5		10.0	11.3	
9.2		32.2	37.4		9.5		14.7	49.5		9.5		13.2	52.8		9.5		31.6	53.6		9.5		18.3	3.1	
9.2		38.0	39.1		9.0		26.6	25.2		9.3		15.0	26.4		9.3		40.2	2.3	Kb	9.5		18.7	42.0	
8.5		53.9	55.2		9.4		28.4	42.0		9.0		21.2	30.3		9.0		46.9	25.4	K	9.5		24.0	0.2	
8.5		56.5	22.8		9.4		31.9	20.8		9.2		22.4	5.7		9.3	24	45.7	55.5		9.3		26.9	12.2	K
9.5		59.0	35.3		9.3		32.0	51.3		8.8		22.7	46.4	K	9.4		50.5	50.2		9.5	37	7.9	49.4	
9.4	55	7.2	22.5		9.4		39.0	5.5		7.8		35.8	19.8	B	9.2		53.0	32.0		9.5		10.3	27.9	
9.5		20.5	26.1	B	9.5		41.7	56.7		9.5		56.5	30.5		9.5	25	16.3	57.3		9.5		28.5	2.8	
9.2		28.6	8.4		9.5		42.5	59.2		9.4	11	2.4	16.6		9.4		27.1	59.7		9.5		42.0	55.3	
9.5		32.1	49.9		9.1		43.3	43.3		9.5		24.7	41.8		8.1		27.2	19.2	Kb	9.4		46.1	34.1	
5.0		35.9	9.4	K	9.4		47.8	42.5		9.4	12	6.1	30.6		9.0		30.9	46.3		9.5		56.8	47.8	
9.3		42.8	28.0		9.4		51.0	31.7		9.2		8.4	9.1		9.5		35.0	27.5		9.5	38	7.0	40.3	
9.5		52.5	51.5	a	9.2	3	3.8	2.7		9.5		16.6	20.8		9.5		43.0	56.8		5.0		17.6	7.6	Kb
9.5	56	4.3	56.7		9.2		10.7	27.3		9.0		38.9	51.3		9.5		45.3	0.2		9.3		36.9	44.5	
9.0		13.6	24.0		8.6		24.0	54.0	K	9.5		46.0	52.8		9.0	26	5.7	19.1		9.5		41.5	26.4	
8.9		20.9	49.7		8.8		38.2	10.0	K	9.5		50.8	47.0		8.5		12.8	7.7	K	9.0	39	8.3	23.6	K
9.4		31.7	29.8		9.5		41.1	40.3		9.2		51.5	6.3		9.5		23.6	55.2		9.3		17.7	45.2	
9.5		53.6	57.6		9.5		44.3	29.5		9.5		53.6	42.2		8.8		32.4	49.2		9.0		33.2	54.0	
9.0	57	8.5	23.9		9.2		52.3	59.2		9.3		58.5	52.6		9.3		34.9	24.0		9.0		34.4	42 0	
9.3		17.8	5.5		9.3		53.1	48.7		8.7	13	2.5	12.6		8.7		40.5	52.7		8.3		59.1	28.1	K
9.0		19.9	30.8	K	9.2		54.5	13.0		7.7		25.7	16.7	K	9.0		43.8	57.0		9.5	40	12.5	48.8	
8.0		45.0	26.4	K	9.5		57.4	46.1		8.7		32.1	14.0		8.7		53.9	20.3		8.6		41.7	30.3	
9.5		52.5	59.3		9.2	4	9.6	1.0		8.5		43.0	1.0	K	9.5		57.0	35.3		9.5		44.8	35.1	
9.5		58.7	1.4		9.2		34.3	21.5		9.4		45.2	37.6		9.2	27	2.7	51.8		9.0		51.5	46.5	
9.0		59.9	35.3		9.2		36.8	47.8		9.5		47.5	24.0		9.0		3.2	32.7		9.5		59.6	25.5	
9.2	58	13.6	45.3		8.7		47.7	18.7	K	9.5		55.9	57.1		9.5		15.0	54.3		9.5	41	0.0	26.7	
9.4		37.3	28.0	B	9.2		50.6	20.8		9.5	14	5.7	15.8		9.5		16.1	50.8		8.3		8.1	10.4	K
9.5		44.6	59.3		9.3		55.0	26.4		9.5		15.4	31.1		9.5		27.8	29.5		9.2		23.0	26.7	
9.2		45.6	56.9		8.6	5	5.0	52.2	Kb	9.5		17.3	46.1		9.0		37.6	16.6		9.5		32.7	50.8	
8.5		49.5	9.6		9.5		5.6	24.6		9.5		32.7	46.1		8.9		46.1	13.3		9.5	42	4.8	26.8	
9.2		49.7	40.3		8.8		24.4	44.0		9.5	15	0.0	20.0		9.5		47.0	6.3		9.4		6.2	58.5	
9.5		59.0	53.3		8.9		35.0	53.4	K	9.5		6.3	53.7		9.0	28	36.3	5.6		9.2		6.6	54.3	K
9.4		59.0	57.6		8.5		45.2	30.9	K	9.5		15.7	5.4		8.8		40.4	30.6	K	8.8		19.3	58.2	K
9.5	59	1.3	24.5		9.5		59.1	32.2		9.5		31.4	38.2		8.8		45.9	41.4	K	9.5		27.7	36.8	
9.5		11.0	53.0		9.2	6	22.6	42.0		9.4		53.8	27.1		9.1		52.3	13.2		9.1		57.8	23.3	
8.7		22.8	19.7		9.0		24.0	26 3	K	9.0		55.9	37.5		9.2	29	51.5	48.8	b	8.3	43	24.9	32.3	Kb
9.3		28.9	29.6		8.1		59.8	15.4	K	7.7		59.9	10.8	K	8.5	30	15.2	26.8		9.5		40.3	18.8	
8.8		35.7	57.5		9.4	7	1.4	6.2		9.5	16	44.0	13.0		9.0		23.7	28.5		9.5		41.5	58.0	
8.8		40.3	53.5		9.5		5.7	51.3		9.3		46.1	45.1		9.5		38.6	46.6		9.5		54.7	52.9	
9.0		45.1	5.5		8.5		8.0	20.0	K	9.5		49.4	48.9		9.5		41.9	5.9		9.5		57.0	58.1	
9.3		45.4	43.0		9.5		10.2	56.4		5.8		55.3	56.9	Kb	8.5	31	7.0	6.0	K	9.2	44	2.7	47.7	
9.0		47.8	47.0		9.3		37.6	28.0		9.3	17	7.5	51.6		9.5		18.4	48.4		8.5		5.5	31.9	K
9.5		48.9	36.5		9.4		45.7	17.0		8.7		14.9	12.4		9.5		39.3	37.3		9.5		14.4	18.1	
		+	−				+	−				+	−				+	−				+	−	
10pr.		33.37	0.81		10pr.		33.34	0.91		10pr.		33.31	1.04		10pr.		33.26	1.22		10pr.		33.20	1.39	

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	7ᵘ—8ᵘ		+11°			8ᵘ		+11°			8ᵘ		+11°			8ᵘ		+11°			8ᵘ—9ᵘ		+11°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	44	31.8	42.1		8.8	0	49.8	1.3	K	9.0	13	52.0	30.9	K	9.5	29	0.0	17.4		9.5	47	6.9	6.0	
9.5		42.3	2.5		9.5	1	18.9	9.1		8.7	14	0.9	35.0	K	9.5		10.5	2.5		9.5		29.3	35.2	
9.5		48.4	26.2		9.2		22.3	49.1	*a*	9.5		24.0	44.2	*a*	9.2		16.4	27.8	K	9.0		34.4	13.3	
9.5		49.0	43.2		9.5		31.3	45.9		8.0		27.9	6.7	K	9.5		41.8	14.7		8.8		44.4	5.1	K
9.5	45	8.8	53.2		9.2		35.4	4.3	K	9.0		30.3	15.0		8.1	30	2.9	57.4	L	9.5	48	12.3	30.0	
9.5		14.5	44.2		9.5		44.3	19.5		9.5		53.3	12.5		8.8		12.7	22.3	K	9.3		32.3	18.2	*a*
9.5		35.7	10.5		9.5		46.2	15.0		9.5	15	9.6	25.0		9.5		21.9	53.0		8.5	49	14.4	18.9	K
8.0		39.0	3.9	K	9.2		51.6	15.0		9.0		40.9	45.6		9.2	31	8.2	54.6		9.5		42.3	24.4	
9.5		43.6	41.5		8.8	2	4.0	50.6	K	9.5		44.3	18.8		9.5		19.9	39.7		8.8		47.4	3.5	
9.5	46	4.8	57.7		9.5		20.3	49.4		6.5		58.9	6.3	K*b*	8.7	32	9.3	34.5	K*b*	8.2		58.6	23.0	K
9.3		21.8	59.5		9.5		51.1	0.3		9.0	16	23.4	56.4		9.5		16.3	24.8	*a*	9.3	50	5.8	29	
9.5		24.3	58.8		9.5		58.8	11.1	B	9.5		33.3	30.3		7.2		38.2	26.2	K	9.0		7.3	36.3	K
9.5		26.5	36.2		9.5	3	0.6	21.2		9.0		40.9	0 5	K	9.3	33	5.6	37.3	K	9.5		14.4	55.3	
9.2		32.6	15.3	*b*	9.5		4.1	6.2		9.3		48.3	15.7		7.5		21.3	33.8	K	8.5		23.0	23.4	K
9.0		48.7	41.1		9.3		22.6	43.4		9.5		58.6	2.8		9.5		37.3	48.0		9.5	51	27.6	37.0	
9.5		53.1	43.0		8.8		28.4	7.0		9.5	17	49.3	40.7		9.5		40.9	25.2		9.0	52	12.7	11.9	K
7.3	48	20.9	14.4	K	8.7		37.5	50.9	K	9.0	18	11.3	26.0	K	9.5		47.9	23.2		9.5		58.6	22.5	
8.8		30.9	6.0		9.0		46.9	40.6	K	9.2		46.3	8.4	K	9.5	34	24.6	20.3		9.5	53	4.0	51.8	
8.0		34.6	26.1	K	8.0		47.2	36.8	K	9.5		48.3	31.1	B	8.5	35	48.9	47.0	K	9.5		11.9	42.5	
9.0		48.3	30.8	L	9.5	4	2.1	57.0		8.7		53.9	30.2	K	9.5		58.3	7.7		9.4		25.9	4.6	
9.2	49	1.5	59.0		9.3		18.6	45.2		9.1	19	15.0	12.5		9.5	36	10.4	30.9	B	8.7		31.0	17.5	K
8.7		7.9	23.3	K	9.3		30.0	54.1		9.0		34.9	44.5	L*b*	9.2		52.6	51.9	*b*	9.5		44.6	48.4	
9.0		9.2	56.9	K	9.3		37.8	55.3		9.5		36.3	16.5		9.5		59.3	56.4		9.3	54	1.9	36.3	
9.0		10.4	48.9		7.6		40.9	37.3	K	9.5	20	10.1	57.0		9.5	37	19.6	21.7		9.5		22.6	39.0	*a*
9.5		56.6	49.0		7.3		50.3	36.9	K	9.4		10.1	51.5	B	9.3		47.3	1.2		9.4		52.1	14.6	B
8.8	50	19.4	59.0		9.5		58.3	53.8		9.5		10.3	44.5		9.2	38	3.4	56.3	*a*	8.8		55.3	40.1	
9.4	51	2.8	30.2	B	7.3	5	37.9	17.4	K	9.5		24.9	23.7		9.5		30.4	46.3	B	9.5	55	9.9	28.6	
9.5		7.9	46.3		9.5	6	3.9	57.0		9.5		37.6	50.8		7.7		32.4	6.2	K	9.3		14.9	24.3	*a*
9.4		9.8	24.7		9.0		7.3	26.7		8.7		45.9	19.1	L	9.5		49.3	17.5		9.3		17.0	33.2	*a*
9.2		14.5	48.7		9.5		11.9	34.8		8.8	21	21.6	46.5		9.0		49.3	28.6	K	9.4		21.9	45.0	
9.5		56.3	36.1		9.2		14.6	11.9		9.3		37.9	39.3		9.5		59.0	0.7		9.3		35.3	35.2	*a*
9.0	52	18.5	53.3	L	9.5		31.0	46.6		8.8		52.6	23.0		7.7	39	12.4	56.7	L	9.0		47.2	13.3	
9.0		20.4	26.0		9.2		36.6	27.5		9.0	22	9.3	6.2	K	7.8		16.9	41.0	K	9.0		54.8	52.0	
8.5		50.9	5.6	K	9.5	7	3.7	29.6		9.5		38.5	33.7	B	8.8		35.0	11.9	K	8.5	56	4.9	43.9	L*b*
9.0	53	14.0	24.7		9.5		8.7	6.0		9.5		41.6	27.1		9.5		58.6	24.8		9.2		17.2	58.8	
9.5		16.1	8.7		8.0		36.5	52.7	L	9.5		53.9	5.2		9.0	40	17.2	53.5		7.8		44.0	25.2	K
9.5		20.2	51.1		9.3		44.6	10.8	*a*	8.8	23	9.3	40.2		9.5	41	3.8	50.0		9.5		56.8	59.7	
9.0	54	45.6	12.4	K	8.7	8	3.9	13.6	K	9.3		15.7	3.4		9.4		12.6	54.9	B	9.0	57	13.6	4.1	K
9.5		47.5	24.3		8.5		17.9	17.7	K	9.4		52.0	39.6		9.3		53.0	24.1		9.5		16.6	24.4	
8.3	55	20.5	45.2	K	7.8		35.0	29.5	K	9.5		59.5	55.5		9.3		53.1	57.7		9.0		33.8	50.0	
9.2		32.8	54.1	K	9.5		41.6	45.5		9.5	24	7.9	33.8	B	9.5		53.9	37.7		9.5	58	8.1	13.6	B
9.5		45.9	18.0		9.3		43.4	42.0	B	9.3		13.3	24.3		8.7		59.6	47.7	L	9.5		15.9	12.0	
8.0	56	18.9	15.6	K	9.5		46.8	47.0		9.3		31.2	30.0		8.9	42	22.7	56.7	K	9.5	59	48.9	45.0	
9.5		19.7	13.3		9.5		46.8	43.7		9.0		32.4	54.8	K	9.2		24.5	52.1	K	5.5		54.3	14.0	K*b*
9.2	57	4.9	25.7		9.5		46.9	37.2		8.0	25	9.1	45.5	K	9.5		31.3	27.2		9.5	0	10.6	43.9	
9.4		5.9	39.7	B	8.2	9	8.8	47.5	K	9.5		23.4	34.4		9.5	43	19.1	56.5		9.5		22.9	9.8	
8.6		12.0	40.3	K	8.7		17.3	13.3	L	9.5		28.9	3.8	*a*	9.5		21.4	53.9		9.4		32.3	42.9	
9.0		15.1	15.3		8.8		39.5	17.0		9.5	26	2.0	51.9		9.3		46.3	41.1		8.8	1	16.8	24.5	K
9.5		43.9	57.7		9.5		51.6	50.4		9.5		3.4	21.3	*a*	9.5		56.0	35.0		9.0		56.9	44.3	
9.5		53.8	57.1		9.5		51.6	44.1		7.8		4.9	3.9	K*b*	9.4		59.3	50.7		8.3		59.0	4.5	K
9.4	58	22.8	55.3		8.8	10	15.9	33.0	K	8.3		43.5	19.9	K	7.5	44	2.0	40.3	K	9.5	2	39.9	10.6	
9.5	59	2.3	54.6		9.3		19.6	26.1		9.0		57.2	31.0	K	9.0		7.2	46.6	K	9.5		50.3	14.4	
9.3		2.4	30.6	K*b*	9.2		22.6	9.0		9.5		57.2	37.2		9.5		19.6	52.0		9.5	3	0.6	16.1	
9.0		19.9	20.5	K	9.5	11	13.6	22 3		7.5	27	8.0	47.0	K	9.0		35.5	47 8	K	9.5		15.4	22.6	
9.5		23.1	1.2	B	9.5		16.7	53.2		9.5		24.7	23.1		9.5		47.9	40.1		9.5		37.6	51.2	
9.3		39.9	33.4		9.5		24.2	5.9		9.4	28	1.9	33.7		8.7	45	36.9	41.5	K*b*	8.0	5	6.0	15.4	K
9.5		59.3	31.3		9.5		48.3	36.2		9.5		18.0	2.4		9.5	48	8.9	29.3		9.5		33.3	25.1	
9.5	0	7.6	24.0		9.5	12	12.6	42.8		9.5		25.2	53.0		8.8		41.0	21.0		9.0		47.9	43.9	
9.2		34.7	56.7	*b*	9.5		14.3	16.0		9.0		30.4	5.5		9.3		55.3	17.4		9.5	6	11.6	48.8	
9.5		35.6	40.0		9.4	13	2.9	21.0		9.0		39.2	59.0	L	9.4		55.6	42.1		9.5		26.6	40.7	
		+	—				+	—				+	—				+	—				+	—	
10pr.		*33.13*	*1.56*		*10pr.*		*33.04*	*1.75*		*10pr.*		*32.94*	*1.94*		*10pr.*		*32.81*	*2.14*		*10pr.*		*32.68*	*2.32*	

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	9ᵐ	+11°				9ᵐ	+11°				9ᵐ—10ᵐ	+11°				10ᵐ	+11°				10ᵐ	+11°	
m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′	
9.5	6 32.8	53.5			9.5	27 19.6	12.0			9.5	46 3.9	25.2			9.5	3 6.3	48.7	B		9.5	24 25.9	13.4		
9.5	7 6.7	0.4			9.5	50.0	47.2			9.5	31.4	38.1			9.4	28.0	11.8	B		9.5	38.5	5.6		
8.9	23.7	48.8	K		8.5	28 34.6	12.7	K		9.4	53.0	54.9			9.5	39.3	58.5			8.8	25 10.8	1.8	K	
9.5	45.6	45.3			7.7	42.3	30.0	K		9.4	58.1	47.2	B		9.3	4 9.3	37.2	B		9.5	26 25.0	9.1		
9.3	9 39.2	2.4	*b*		9.3	54.6	33.5			9.5	47 32.6	55.0	B		9.1	28.8	15.8	*b*		9.5	46.3	13.0		
9.5	44.6	31.8			9.2	29 45.5	44.6			9.5	48 16.9	54.1			9.0	51.2	0.9	K		9.5	52.7	45.1		
9.5	59.0	11.7	B		9.0	51.3	24.1	K		9.3	21.4	28.8			9.3	5 37.5	59.2	B		9.5	27 2.8	59.9		
8.3	11 3.6	18.6	L		8.8	30 8.2	58.3	K		8.5	36.7	21.8	K		9.5	47.9	53.2			9.5	41.3	36.6		
8.0	8.5	33.5	K		9.0	18.3	7.4			9.0	55.9	27.0			9.5	6 0.9	0.4			9.2	45.3	40.1	*b*	
9.0	23.9	49.7			9.5	39.9	9.8			9.5	49 8.9	16.6			8.2	7.3	33.5	K		9.5	28 4.9	20.5		
9.0	33.2	29.7	K		7.7	59.6	26.1	K		9.3	15.7	2.6	B		9.5	22.4	47.8			9.5	53.3	15.1		
9.4	47.3	25.8	K		9.5	31 12.3	47.7			9.5	42.9	11.4			9.0	26.8	13.4			8.7	29 1.8	46.7	L	
9.5	52.8	10.6			9.3	24.7	56.2			9.0	50 44.4	7.2	K		9.5	47.8	28.7			9.5	31.8	47.1		
8.5	12 39.6	34.9	K		8.9	26.5	32.1	K		7.3	53.9	39.4	K		9.5	7 39.2	11.3			9.2	43.8	32.5	K	
9.5	57.0	51.2			9.5	29.9	41.9			9.5	56.4	43.3			9.5	39.9	40.6			9.4	30 16.8	23.8		
9.3	13 36.0	51.7			9.0	32.1	42.8	K		7.2	51 0.9	9.3	K		9.5	41.2	7.2			9.5	24.8	29.7		
9.3	14 0.3	41.8			9.5	32.9	58.4			9.4	32.5	54.1	B		9.5	56.4	55.7			9.3	27.6	13.0	B	
9.5	14.0	51.7			9.3	47.8	3.7			9.5	42.4	5.8			9.5	8 50.9	52.4			9.5	33.9	31.6		
9.3	43.5	1.3			8.8	32 12.3	9.2	K		9.5	52.4	40.5			9.5	9 50.9	17.0			9.3	31 23.9	33.7		
9.3	45.6	45.0			9.5	33 0.7	14.0			9.5	52 40.9	36.6			9.5	10 3.7	1.7			9.1	32 13.8	4.7	K	
9.4	59.5	53.5			9.5	7.4	53.9			9.0	53 20.4	27.6	K		9.5	10.7	16.0			9.5	31.8	56.6	B	
9.5	15 9.6	30.0			9.4	46.9	0.4			9.5	36.3	7.3	B		9.3	36.3	21.0			9.5	38.7	57.6		
9.5	15.0	51.7			8.9	58.3	49.4	K		9.5	45.9	49.4			8.8	39.8	33.5	K		9.5	39.0	55.1		
9.5	28.8	11.6			9.5	34 20.5	4.4			9.5	49.0	33.3			9.3	11 19.9	4.1			9.5	44.3	3.3		
9.0	29.9	36.3			8.5	35 22.9	9.2	L		9.3	54 4.4	28.3			9.3	46.3	20.3	*B*		9.4	50.9	2.6		
9.3	48.9	23.8			9.5	43.6	49.5			9.5	16.9	41.4			8.7	12 15.8	51.8	R		9.3	33 37.1	59.8		
8.8	49.9	40.0			8.0	48.2	11.0	L		9.5	19.9	38.2			8.5	34.3	34.9	K		9.5	56.8	21.4		
9.5	56.0	22.7			8.9	36 15.2	24.4	L		9.5	27.9	29.9			9.5	37.9	44.7			7.7	34 2 3	29.9	K	
8.3	16 20.3	10.2	K		9.5	19.9	55.5			9.5	29.5	42.8			9.5	43.8	51.4			7.2	38.6	7.0	K	
9.3	36.3	36.6			9.5	39.2	4.3			9.5	30.2	51.8			8.8	13 46.6	47.9	Lb		9.5	35 16.9	22.6		
8.8	41.2	2.5			9.3	52.5	0.5			9.5	54.9	46.9			9.5	14 2.7	23.6			9.5	36 2.9	31.0		
9.5	47.8	44.3			9.5	54.8	36.1			9.5	55 9.0	9.8			8.0	12.2	25.2	K		9.2	27.3	57.8	K	
8.3	53.6	33.8	K		9.3	37 11.6	55.0			9.0	39.4	27.1			9.5	12.8	41.2			7.7	47.8	6.8	K	
9.2	17 0.0	55.7	*b*		8.7	13.2	27.6	K		9.5	57.9	29.4			9.5	15 9.9	10.1			9.5	50.3	12.7		
8.4	13.4	2.4	K		9.5	31.5	34.5			9.5	56 15.6	57.5			9.2	14.5	58.1			9.1	37 34.3	16.8	*b*	
8.7	51.5	11.9	K		9.5	49.8	15.3			9.5	20.9	43.0			9.5	16 1.4	6.6			9.5	38 5.3	25.2		
9.5	18 40.6	2.4			9.3	50.6	56.9	Bb		9.5	22.0	3.8			7.3	39.3	19.6	K		8.2	57.6	57.3	Kb	
8.8	19 29.3	24.6			9.5	38 41.7	58.9	B		9.5	35.9	18.8			9.5	17 11.9	28.1			9.3	39 28.8	41.6		
8.3	43.3	30.7	K		9.0	51.2	3.6			9.5	40.8	1.3	B		8.4	15.8	53.0	L		9.5	31.7	49.5		
9.3	50.5	58.2			9.5	39 11.4	41.9	B		9.5	45.9	40.5			9.0	16.5	35.9	R		7.9	40 9.8	13.3	K	
9.5	20 42.8	59.9			9.5	12.1	36.1	B		9.0	59.4	44.8			9.0	36.8	3.6	*B*		9.5	45.0	52.4		
9.5	21 11.6	49.8			7.8	42.1	30.5	*B*		8.9	57 9.6	20.1	K		8.0	45.8	52.5	K		9.3	41 25.9	11.1	K	
9.3	12.3	25.5			9.5	51.3	27.3			8.5	52.9	36.7	K		9.3	18 1.3	0.2			5.3	38.1	18.9	K	
9.5	21.3	13.3			8.0	55.8	3.1	K		9.5	58 42.4	7.6			9.5	39.9	39.5			9.5	51.6	49.7	B	
9.5	22.0	3.6			9.3	40 33.5	58.6			9.3	47.9	42 7			7.7	45.3	13.8	K		9.5	42 5.0	57.0		
9.5	29.0	24.8			9.5	47.9	9.3			8.7	58.5	52.6	K		9.5	19 16.7	59.1			9.4	36.9	50.9		
9.5	51.0	51.7			9.0	41 3.9	13.8	K		9.5	59 7.4	6.9			9.5	18.8	44.8			9.3	52.0	40.8	B	
9.3	22 11.7	23.9	B		7.8	42 4.7	46.5	K		9.5	24.4	45.4			8.8	25.8	10.7	K		8.7	53.6	5.9	K	
9.5	21.9	43.2			9.5	43 0.9	24.3			9.5	38.4	23.1			9.5	50.9	31.1			9.5	43 15.7	32.5		
9.3	33.7	38.7	B		9.5	1.5	54.7			8.8	43.9	40.5	K		9.5	52.8	13.3			9.5	58.7	16.7	Bb	
8.8	40.0	56.6			9.5	8.9	24.2			9.5	49.9	24.7			9.2	20 12.3	4.0			9.5	44 2.3	3.2		
7.8	50.3	14.3	K		8.2	10.4	34.0	K		9.5	58.5	39.2			9.5	58.7	45.0			9.3	22.3	38.8	B	
5.3	24 8.0	55.7	Kb		9.5	57.0	8.0			9.0	0 4.9	31.6			9.5	21 6.3	37.1			9.5	28.2	33.1		
8.0	16.9	39.4	*B*		9.5	44 49.0	59.3			9.3	16.2	51.4			9.5	20.7	46.7			9.5	45 16.0	38.3		
7.9	31.4	24.8	B		9.5	54.4	24.6			9.5	25.9	5.8			9.0	39.8	15.8	K		9.3	46 34.3	51.6		
9.5	25 1.6	9.5			9.3	55.9	1.7			9.5	44.0	56.0			9.5	22 8.8	44.3			9.5	47 44.4	57.3		
9.5	7.9	50.5			8.7	45 34.9	51.4	K		9.4	1 14.9	7.7	B		9.5	10.9	17.0			9.0	50 9.7	25.7	B	
8.8	53.9	5.3	K		9.5	37.7	33.5	B		9.5	16.2	0.8			9.1	23 11.4	59.4	K		9.1	38.9	33.8		
9.5	26 6.2	8.1			9.3	37.9	50.2	K		9.2	35.8	24.1	K		8.5	52.1	54.6	K		9.5	51 7.8	44.1		
8.8	27 15.0	47.4	K		9.1	40.5	39.0	*b*		9.5	2 41.9	25.6			9.5	24 7.9	55.8			9.2	9.9	53.8	*b*	
	+	—				+	—				+	—				+	—				+	—		
10pr.	*32.50*	*2.53*			*10pr.*	*32.31*	*2.71*			*10pr.*	*32.14*	*2.85*			*10pr.*	*31.94*	*2.99*			*10pr.*	*31.70*	*3.12*		

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	10°—11°		+11°			11°		+11°			11°—12°		+11°			12°—13°		+11°			13°		+11°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	51	26.2	31.9		9.5	22	34.5	52.6		8.6	54	11.0	52.7	K	9.1	32	36.0	9.5		9.2	2	40.2	18.8	b
9.5	53	2.3	15.9		9.5	23	19.3	4.6		9.3	57	23.9	37.0		9.5	33	17.1	26.2		9.4	3	16.9	48.5	
9.5		40.8	33.8		9.3		31.1	40.7	a	9.5		49.9	22.8		9.0		21.0	43.9		8.5	4	52.3	59.8	K
9.5		45.8	25.4		8.9		57.2	41.0		7.8	58	2.5	46.3	K	7.0	34	17.3	12.7	Kb	9.5	5	11.4	10.5	
9.3	55	1.7	6.6		8.6	24	2.9	55.4	K	9.5		29.4	32.6		5.2		34.6	1.5	K	9.5		56.7	23.8	B
9.5		18.7	32.1	b	9.5		5.0	16.9		8.3		40.8	16.5	K	9.0		51.8	39.8		8.8	6	18.1	48.6	
9.3	56	59.6	59.8		8.8		19.6	50.9	K	9.5		44.9	43.1		8.6	36	43.3	43.5	Kb	9.0	7	42.0	44.7	
8.8	58	39.5	5.5		9.5		45.6	28.8		9.5		45.5	4.3		9.5	38	0.0	6.7		8.3	8	0.4	28.0	K
9.5		46.0	54.6		9.4	25	5.3	43.4		8.1	59	51.4	19.8	K	8.8		12.3	22.5	K	8.7		17.6	23.0	K
9.5	59	28.8	52.4		8.8		46.5	0.4	K	9.5		55.2	57.7		9.0		42.6	21.8	Kb	8.7		30.2	1.2	K
9.0		35.9	42.3	S	9.1	26	8.8	53.1		9.5	0	51.2	29.9		9.4		47.7	56.8		9.5	9	34.3	1.1	
9.5		54.4	29.7		6.7		39.7	50.2	Kb	9.3	2	16.8	9.0	B	9.5		47.9	4.7		8.8		44.8	28.1	
9.0	0	13.7	0.6	K	9.3	27	29.5	14.9		9.4		22.0	9.2	Bb	9.5		55.7	34.8	B	9.5	11	24.5	29.5	
9.5	1	50.2	0.8		9.5		34.3	43.0		9.5	4	31.1	47.5		9.4	39	4.1	0.1		9.2		26.3	35.8	b
9.5		52.4	34.0	B	9.4		36.0	16.4		9.2	5	10.8	35.0	S	9.3		7.4	49.9		9.0	14	0.4	21.6	b
9.5	2	2.6	54.0		6.7	28	1.6	59.2	K	8.2		21.8	54.7	K	9.5		40.0	45.1		9.3		32.5	29.8	
9.4		12.3	27.4		6.8		13.3	42.7	K	9.5		40.7	50.5		9.2		50.3	18.8		9.5	15	12.0	14.5	
9.2		25.7	41.5	B	9.5		49.3	5.7		9.5		43.1	19.4		9.5	40	50.1	56.7		9.5	16	17.8	11.4	
9.4		35.0	40.5		8.7	29	27.0	18.9	K	8.0		49.2	38.8	K	9.3	41	40.9	1.6		9.2		32.0	43.0	
9.3		39.9	21.3		9.5		30.6	56.0		6.4	6	3.5	4.0	K	9.3	42	5.6	47.0	a	9.0	17	24	11.2	
9.0		47.5	51.2	B	9.2		36.1	41.3	K	9.6	7	7.2	55.4		9.0		35.0	47.6		9.3		38.4	29.8	
8.2		50.5	56.6	K	9.3	30	28.4	22.6		8.3	8	19.1	40.1	K	9.4	43	42.8	26.4		8.8	18	5.9	18.8	Kb
8.8	3	9.9	9.4		9.3	31	37.4	4.2		9.5	10	4.7	26.5		9.1	44	10.7	10.7	b	8.3		11.2	31.6	K
8.8		12.8	59.9	K	8.8	32	6.2	8.3	K	9.5		23.9	4.2		9.4	45	10.4	16.0	R	9.3		14.7	21.0	
9.3		39.8	55.0		9.3		45.1	49.9		9.1	11	10.1	39.3	b	9.0		23.8	59.0	B	9.5		17.7	20.3	
9.5	4	10.7	37.6		9.3	33	19.9	46.8		9.2		27.9	25.2		9.4		35.0	23.5		9.5		33.0	54.6	
9.5		19.7	3.2		8.7		37.8	36.3	Kb	9.4		40.4	7.6		9.5		39.1	59.4		9.2	19	23.3	39.7	
8.5		35.9	53.6	K	9.5	34	20.0	10.4		8.6		43.2	24.3	L	9.5		51.2	59.9		9.2		31.4	41.0	
9.3		38.5	27.5		9.5	35	5.5	39.7		9.2	12	13.3	47.5	b	9.5	46	40.3	10.2		9.5	20	14.9	40.4	
8.9		40.7	11.4		9.3		31.7	3.9		8.3		31.9	17.1	K	9.5	47	32.3	46.5		9.5		21.7	29.8	
9.4	5	6.0	10.4	B	8.5		51.8	12.4	Lb	9.0	14	22.2	58.8	K	9.3		53.7	7.6		9.2		30.2	42.3	
9.4		8.5	17.3		8.6		54.8	47.7	K	9.2	15	11.9	42.5	b	9.5		58.0	47.8		9.4		36.7	29.3	
7.5		44.8	13.8	K	8.5	36	6.9	30.1	K	8.8	16	56.5	5.4		8.8	48	11.8	29.3		8.3	21	7.4	13.8	K
9.0		58.4	38.3		8.5		31.2	29.4	K	8.6	17	7.2	57.7	K	9.5	49	11.7	13.7		8.8		30.1	27.3	K
9.4	6	43.4	24.0	B	8.7		34.7	8.6	K	9.0		26.1	30.5	K	8.3		29.1	17.8	K	6.4	22	3.1	34.6	Kb
9.5		57.7	3.0		9.3	37	44.9	45.3	B	9.4		32.2	4.2		9.2		30.6	41.0	b	9.1		36.1	10.7	
8.7	7	9.1	42.0	Kb	9.3	38	51.1	1.2		9.5		36.9	31.2		9.4	50	5.5	41.5		9.5	23	2.6	12.0	
9.5		19.7	1.9		9.3		52.9	15.4		9.5		55.1	21.0		9.4		27.2	1.2		9.3		11.2	40.0	
8.7		48.0	44.4	Lb	8.6	39	51.7	14.8	K	9.3	18	27.7	27.2		9.5	51	57.3	39.3		9.5	24	27.8	6.0	
9.3	9	20.3	23.0		8.8		52.7	21.7	K	9.5		29.9	41.5		8.2	52	7.5	28.1	K	9.1		32.2	56.7	b
9.3	10	26.9	35.2	B	8.3	41	24.2	29.3	K	9.5		42.1	3.6		9.4		10.4	35.6		9.5		53.9	29.2	B
8.7	11	3.6	23.3	K	9.3	42	32.5	19.0		9.5	19	27.4	46.6		9.2		13.1	7.1	aB	9.5	27	47.6	32.3	Bb
8.5		19.7	23.3	K	8.7		39.4	51.0		9.5		39.7	13.4	b	9.3	53	16.6	58.7		9.5	30	6.7	31.3	
9.3		23.2	1.4		9.5	43	21.1	41.3		8.7	20	8.5	66.7	K	9.4		22.6	23.1		9.3	31	8.0	34.2	
9.3	12	32.3	7.6		8.9	44	5.5	40.4		9.2		10.3	49.5	K	9.3		45.1	55.5	a	9.5		37.1	11.4	
9.2		39.0	59.5	K	8.3		50.4	47.4	K	9.5	21	13.6	8.6		8.9		59.5	49.7	K	8.5		46.7	59.6	
9.2	14	6.2	19.3	b	9.3	45	40.7	19.1		8.8	22	8.1	56.1	Kb	8.5	54	7.7	54.7	K	9.5		52.8	1.7	
4.1	16	22.0	19.3	K	8.8	46	8.8	47.8		9.5	23	10.6	30.2	B	9.2		10.4	8.7		7.3	32	3.8	15.4	K
9.4		28.4	43.4	B	8.5		26.3	55.4	Kb	9.3		55.0	7.8	K	3.0		57.9	44.1	K	5.7		24.8	29.1	K
9.5	17	13.6	45.1		9.1		52.4	53.4		8.7	24	17.4	4.3	K	9.0	55	41.5	13.4	K	9.2	33	24.6	22.3	
9.5		19.7	14.1		8.8	48	14.0	9.0		9.2		32.7	28.8	b	9.4	57	40.4	52.6		8.9	35	0.2	30.8	K
8.8	18	40.1	4.2	L	8.6	49	18.5	25.5	K	9.4		48.7	16.5		8.8		44.0	7.4		9.5		24.1	21.0	
8.5		56.2	12.8	K	8.4		28.3	20.5	K	6.4	25	43.2	5.3	Kb	9.5	58	7.7	47.2		8.7		25.3	57.0	K
9.5	19	1.5	28.1		9.5	50	38.8	32.7		7.5	27	1.9	43.4	K	8.7		12.1	9.6	K	9.5	36	33.5	38.1	
9.5	20	7.2	17.8		9.3		43.3	14.3		8.0		33.1	38.3	K	8.7		12.8	1.8	K	9.5		40.8	37.2	
8.3		22.7	48.8	L	9.5		48.6	47.8		9.2	28	1.2	5.0		9.3		24.0	51.1		9.3	37	22.5	39.2	
8.3		34.2	28.3	K	9.5	51	41.1	12.7		8.3	29	8.1	31.9	K	8.7	59	14.0	29.1		9.5		54.2	31.7	
8.5		37.2	30.3	K	9.0	52	5.3	29.3	Kb	8.0	30	18.3	23.1	K	8.4		24.4	49.6	K	9.0		54.6	5.8	K
9.3	21	9.3	35.6		9.0	53	40.1	19.5	Rb	9.5	32	13.7	5.1		9.4		56.7	2.4		6.9	38	4.5	3.0	K
8.9	22	10.0	12.7	Kb	8.5	54	6.2	10.0	K	9.4		33.8	16.7		8.6	0	10.3	54.9	Kb	8.7	39	29.7	34.1	L
		+	−				+	−				+	−				+	−				+	−	
10pr.		31.37	3.24		10pr.		31.01	3.32		10pr.		30.56	3.34		10pr.		30.16	3.28		10pr.		29.79	3.14	

13°—15° +11°

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	13°—14°		+11°			14°		+11°			14°—15°		+11°			15°		+11°			15°		+11°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.5	40	13.5	40.9	K	9.5	10	23.1	59.5	B	8.9	39	22.3	48.3	B	9.5	6	22.2	55.0		9.4	33	38.9	8.2	
9.5		14.0	48.7		7.0	11	30.7	11.1	K	9.4	40	2.4	58.7		9.5		33.4	37.9		9.5	34	31.6	29.7	
9.2	41	55.5	37.5	b	9.0		43.2	3.1	K	9.0		38.2	17.9		8.7	7	10.4	16.6	L	9.3		43.6	57.2	
8.6	42	14.1	19.3	K	9.5	12	21.6	40.0		9.2		39.8	58.0		8.5		29.0	20.7	K	8.0	35	4.3	1.9	K
9.5		55.7	35.5		9.5		25.2	52.6		9.5	41	28.2	10.8	B	9.3		42.4	59.1	B	9.1		4.5	32.0	
9.5	43	1.8	52.4		9.5	14	3.8	46.7		9.5		50.6	54.2		8.5	9	14.9	21.7	K	8.2		13.3	27.2	K
9.5	45	0.5	59.0		7.8		14.9	30.2	K	8.8	42	7.7	8.8	K	9.5	10	23.9	40.0	b	9.0		34.6	3.8	
8.8	46	48.3	47.0	B	9.5		33.9	3.2		9.5		23.2	23.8		9.1		31.8	1.5	B	8.5	36	7.3	27.9	K
9.5	47	0.8	5.5		9.2		57.8	58.3	K	9.5		34.2	15.3		9.5	13	50.9	43.4		9.5		10.3	5.2	
8.7		57.3	52.5	K	9.5	15	22.0	18.8		7.4		48.4	5.9	K	9.2		54.4	28.2	Bb	9.5	37	2.3	46.9	
9.3	49	4.6	56.1		9.4	16	2.4	10.7	K	9.2		51.1	26.1	Bb	9.5	14	26.4	6.6		9.5		8.0	16.6	a
9.5		14.8	7.1		9.5		5.1	13.0		9.4		59.2	53.3		9.5		29.9	19.3		8.5		36.3	16.7	L
8.5	50	4.1	1.0	Kb	7.0	17	3.6	54.5	L	9.5	43	54.0	13.0		9.5		39.4	3.5		7.5		40.3	44.8	K
9.5		35.6	51.6		9.0		8.7	35.5	K	9.5	45	31.3	2.9		8.4		59.1	2.6	K	7.6		44.8	53.0	K
9.3		41.3	1.2		9.0		20.9	16.9		9.5		49.5	31.6		9.5	15	34.0	54.5		9.3		52.7	5.9	
9.5	51	36.5	40.6	K	9.3		41.9	8.3		8.4		52.2	51.2	L	9.0	16	4.2	52.8	B	9.3	38	9.4	55.8	K
9.5	53	8.6	53.8		9.4		45.4	0.8		9.3	46	17.6	4.9		9.5		23.3	37.0		9.5		23.4	0.6	
9.5	54	2.8	43.6		9.5	18	9.4	48.0		9.5		33.7	8.4		9.0		29.5	14.3	L	9.4		39.3	12.5	
9.3		11.4	35.5	K	9.5		10.9	53.7		9.0		53.0	21.1	B	8.5		30.3	15.9	K	9.4		39.6	20.3	
7.4	55	17.5	1.2	K	9.5		51.5	40.4		9.5	47	12.1	58.0		7.3	17	17.6	4.1	K	9.5		56.3	25.9	
8.8		41.1	4.5	K	9.5	19	59.9	52.4		9.4		25.7	23.8		7.3		53.0	30.4	K	9.5	39	34.8	12.7	
9.5		50.6	47.7		8.8	20	43.7	30.0	K	8.2		44.3	7.4	Kb	9.2	18	14.6	42.0	B	9.3		41.9	40.2	B
9.3		52.0	10.9		9.5	21	8.3	10.5		8.7	48	15.9	25.4	L	9.5		14.8	25.3		9.0		47.2	47.0	B
9.5	56	2.0	58.5		7.8	22	1.3	41.3	K	8.3		38.9	16.7	L	8.7		22.0	9.5	K	7.5	40	12.0	58.8	K
7.0		25.8	29.9	K	9.5	23	1.3	7.5		9.1	50	9.4	3.2	B	9.3		42.3	40.3	B	9.5		32.3	23.5	
9.5		38.8	12.8		9.5	24	1.5	23.3	B	9.5		29.3	2.4	B	9.4	19	3.0	29.9	B	9.5		54.7	59.1	
9.5		47.4	5.4		9.1	25	11.6	59.2	Bb	9.5		37.0	23.6		9.0		55.7	37.7	B	9.5		55.2	3.3	
7.0		52.6	58.8	K	9.5		19.5	54.1		9.5		38.7	13.7		9.5	20	13.3	47.3		9.1	41	25.1	49.4	
9.5	57	42.0	36.9		9.5		49.6	56.6		9.5	51	55.0	58.7		9.5		40.3	26.0		9.0	42	53.3	14.5	
9.5	58	4.0	34.0		9.5	26	4.8	13.6		9.5	52	36.7	1.2		9.1		41.0	9.1	K	9.0	43	21.6	32.7	B
9.4		28.0	38.3		8.0	27	4.2	9.5	Kb	9.3	53	20.0	36.3	B	9.4		45.1	6.2		8.9		38.5	55.1	
9.4		36.8	31.0		9.5		45.4	28.1		9.5		20.2	14.6		9.5	21	56.7	10.5		9.3	44	44.6	42.0	
9.5	59	1.7	20.4		8.6	28	11.7	4.9	K	8.9		39.0	47.5	B	9.4	22	29.0	53.2	b	9.3		53.8	28.7	
9.5		6.3	53.8		8.8		20.1	56.4	Bb	9.4		42.6	32.7	B	9.5		59.7	48.3		9.0	45	17.0	19.6	
8.1		6.6	31.1	K	7.5		49.4	42.5	K	9.5		54.2	52.0		9.2	24	8.8	19.8	b	9.5		37.0	52.7	
9.5		9.0	59.2		9.5	29	19.7	33.0		8.7	55	0.7	22.4		7.2	25	48.7	27.7	Kb	9.5	46	4.6	48.9	
9.5	0	22.5	56.2	B	9.5		59.1	38.8		9.5		6.3	55.9		9.5		52.7	46.2		9.3		8.2	24.5	
9.5	1	22.0	12.4	B	8.8		59.5	28.0		8.3		8.8	43.6	K	8.7		55.8	9.2		8.7		47.6	52.8	K
9.0		40.5	7.4		7.6	30	3.3	51.2	K	8.4		27.6	54.5	K	9.2	26	32.9	58.0		9.5		50.9	28.3	
9.4		41.5	49.1	Kb	9.0		23.0	39.2	B	8.7		54.2	14.7	B	8.2		55.2	55.2	L	9.5		55.3	5.3	
9.0		41.9	9.0		9.5		58.1	29.6		9.5	56	18.0	31.9		3.3	27	53.0	1.7	Kb	9.1	47	49.6	1.6	b
9.5		57.4	16.6		9.2	32	57.2	27.3	K	8.0	57	5.7	17.8	L	9.5	28	9.3	11.5		9.3		56.6	43.5	
9.2	2	15.5	37.1	K	9.3	33	4.0	8.4	B	9.0		9.8	31.9	B	9.2		17.0	26.0	K	7.8		57.8	57.2	K
9.1		28.7	45.7	K	9.5		4.1	59.4		9.5	58	2.0	30.7		9.5		31.0	31.1		9.5	48	33.0	18.0	
9.3	3	10.5	6.0		9.4		18.6	38.6		9.5		6.7	44.7		9.3		47.6	46.3		9.5	49	43.5	42.7	
9.5		30.3	57.7		9.5		56.0	36.4		9.5		22.1	28.6		6.3	29	0.7	44.5	K	9.4		48.0	39.7	B
9.5		45.2	11.5		9.2	34	37.9	52.8		9.3		32.7	31.9		9.5		1.1	3.3	B	9.4		53.9	34.1	
8.9	4	14.2	16.8	K	9.0		51.7	32.3	B	9.5		40.1	2.0		9.0		7.5	42.9	K	9.4		57.1	41.7	B
9.5	5	37.6	20.2		8.0	35	18.6	42.8	K	9.5	59	5.2	57.6		9.5		44.5	27.6		9.3	50	10.0	38.9	
8.4		42.0	44.8	Kb	9.4		59.9	1.9		9.0		11.5	49.1		8.8		46.8	3.6	K	9.3		23.0	23.1	b
9.0		55.7	20.1		8.7	36	27.7	11.8	K	8.2		25.0	19.5	B	9.0		50.7	39.1		9.5	51	34.6	31.0	B
9.2	7	3.1	36.1	b	9.3		43.1	58.0		8.3		44.8	38.1	Kb	9.5	30	33.0	28.7		9.5		54.3	12.8	
9.5		8.1	40.8		9.4	37	4.6	38.5		9.5	0	5.7	2.0		7.5		40.0	37.2	L	9.5	52	30.6	27.3	
9.5		44.0	21.7		8.0		34.9	23.1	K	7.5		23.5	5.6	K	7.4	31	54.2	5.5	K	9.1		37.8	3.0	
9.5		53.1	55.0		9.5	38	2.2	59.3		8.2	1	12.1	28.9	K	9.5		59.9	8.6	B	9.2	53	30.7	12.4	
9.5	9	3.0	45.7		9.5		4.0	38.3		9.5	2	25.4	5.7		9.3	32	12.0	2.5		9.0	54	11.2	37.2	
9.3		22.7	37.1	b	9.5		9.2	47.8		9.3	4	13.1	33.7	Bb	9.0		27.4	12.4	K	8.6		30.4	58.5	K
9.5		25.7	45.1		6.5		21.2	13.0	K	9.5		15.9	52.5		9.5		35.0	58.7		9.3		32.3	3.1	
9.5	10	12.2	25.7		8.6		35.8	8.5	K	9.5	5	38.4	4.6		9.3	33	14.5	46.8	b	9.1	55	9.4	49.4	K
9.0		13.7	14.4		9.4	39	4.6	53.0		6.7		51.1	14.0	K	9.5		37.7	43.6		9.1		18.9	46.9	
		+	—				+	—				+	—				+	—				+	—	
10pr.		29.38	2.90		10pr.		29.19	2.68		10pr.		28.86	2.43		10pr.		28.63	2.14		10pr.		28.47	1.88	

m	2901—2960 15ᵐ—16ᵐ	+11°		m	2961—3020 16ᵐ	+11°		m	3021—3080 16ᵐ	+11°		m	3081—3140 16ᵐ—17ᵐ	+11°		m	3141—3200 17ᵐ	+11°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′	′	
9.0	55 51.0	21.8	K	8.9	12 50.8	37.3	*B*	9.4	33 51.6	2.2		8.8	51 14.0	8.3	K	9.4	7 55.5	52.0	
9.5	56 30.3	13.4	B	9.2	53.4	15.7	*Bb*	8.5	34 11.7	2.1	K	9.3	52 16.1	16.3		8.6	8 2.7	2.3	
7.3	49.6	50.3	K	9.0	13 29.6	27.4		9.1	56.1	47.3	K	8.1	19.0	45.2	K	9.5	15.5	11.0	
9.4	57 7.3	40.6	B	9.5	34.7	5.7		9.3	35 5.6	56.5	K	9.5	32.1	47.9		9.5	16.1	17.6	
9.5	50.2	37.5		9.5	53.6	25.0		9.0	24.6	19.5	R	7.5	59.0	9.0	L	9.5	19.1	54.0	
9.5	56.6	32.0		9.4	14 26.2	4.1		9.2	40.4	57.8	*B*	7.6	53 25.0	2.6	L	8.2	41.0	2.0	Kb
8.5	58 5.0	20.7	K	9.5	52.0	22.9		9.5	36 7.2	16.9		9.5	39.8	24.8		9.3	49.7	11.8	B
9.4	38.7	59.5		8.9	15 2.3	54.4	*B*	8.0	8.1	13.0	K	9.3	43.6	1.9		8.7	9 10.1	3.5	K
9.3	53.6	54.5		8.7	4.6	11.9	*Lb*	9.5	34.2	36.4	R	9.0	45.5	10.1		9.4	13.6	14.4	
8.5	59 5.1	4.8	L	9.5	16.6	3.2		9.0	43.9	0.5		8.5	47.8	20.8	B	9.5	39.0	27.6	
9.5	6.3	20.4		9.3	17.5	19.7	B	8.6	55.1	45.5	K	7.5	54 19.5	33.4	K	8.7	40.5	17.0	K
9.5	13.4	52.1		8.7	20 7	40.4		9.5	37 54.1	55.9		8.0	39.0	22.8	K	8.7	10 26.4	36.2	
9.5	24.6	30.4		9.3	47.1	15.3		9.3	38 12.4	45.2	*B*	9.5	55 15.3	44.2		9.1	33.1	22.8	
9.3	59.9	27.2		9.1	16 14.7	41.1	B	9.5	40.6	34.2		9.5	28.4	6.1		9.0	11 20.0	33.8	
8.7	0 26.5	3.7	K	9.5	24.1	34.6		9.0	43.7	18.0		9.0	56 38.5	50.7	K	9.5	46.5	30.0	
9.1	28.6	37.2	*Bb*	9.5	50.6	17.4		9.2	39 20.6	12.3		9.3	58.7	54.7		5.0	48.4	2.1	Lb
9.5	53.0	6.4		7.8	57.5	55.8	Kb	9.5	22.5	57.2		9.2	57 26.0	33.8	Kb	7.3	12 29.1	19.7	L
9.3	1 12.8	3.7		8.0	17 19.0	45.8	K	9.0	22.8	44.5	K	9.5	31.6	14.6		9.5	47.8	54.9	
8.8	13.3	8.9	L	9.5	22.9	33.4	B	9.0	35.0	52.3	K	8.7	58 21.3	31.0	K	9.5	14 17.6	51.7	
8.7	24.8	0.3	K	8.9	28.6	21.2	*B*	9.0	40.1	18.4	*B*	9.3	32.0	57.6		9.2	19.8	57.0	
9.4	29.3	19.6		9.0	18 0.7	10.0	K	9.5	40 20.2	57.2		8.0	44.1	11.5	K	8.2	32.1	11.5	*B*
9.5	2 30.9	28.0		9.5	21.8	59.7		9.5	47.3	10.9		9.4	54.0	5.7		9.5	39.6	8.4	
9.5	35.9	11.4		8.8	19 17.6	39.3	L	9.5	41 0.6	37.3		9.3	57.8	56.3		9.5	44.0	37.3	
8.8	35.9	42.7	*B*	6.5	23.1	45.5	L	9.5	13.8	59.9		9.5	59 5.0	0.6		9.5	15 4.5	31.7	
7.7	37.6	57.1	K	9.3	37.1	45.9		7.3	18.1	24.9	K	9.3	11.8	51.2		9.5	6.1	28.3	
8.5	53.8	14.4	Lb	9.3	41.2	22.3	*B*	9.5	28.6	16.0		9.5	33.1	32.4	B	7.2	12.0	49.9	K
8.9	59 6	38.3	B	7.2	53.6	18.8	K	9.5	39.0	34 8		9.4	33.9	4.8		9.4	53.1	17.0	
8.7	3 4.5	1.0	*B*	9.5	20 6.3	50.3		9.0	48.3	26.3	K	9.4	43.8	57.6	B	9.4	54.5	34.2	
8.9	14.3	37.5		9.4	7.4	40.7	B	9.3	42 49.6	19.5	*B*	9.4	51.2	40.8	B	9.0	56.0	56.5	K
9.5	4 41.0	35.5		9.5	21.1	20.4		9.4	43 8.2	54.4		9.5	57.5	35.3		9.4	16 18.1	25.9	
9.4	42.0	47.6		9.5	21 21.1	4.7		9.3	16.3	28.6	B	9.5	0 9.9	57.7	B	9.4	24.5	26.6	*b*
9.1	43.9	3.0	Bb	9.5	42.0	35.3		8.1	21.1	20.8	K	9.5	1 52.5	19.4	B	9.5	38.6	2.2	
9.5	44.4	53.3		9.5	48.6	46.3		9.5	54.5	7.5		8.7	2 37.5	52.4	K	9.4	53.1	26.6	
9.5	50.2	18.0		8.6	22 8.8	8.8	L	9.5	44 15.1	12.5		9.4	3 5.8	20.7	B	9.3	17 1.0	46.8	
9.5	5 28.6	56.3	B	9.3	13.6	13.7	B	9.5	20.0	25.6		8.8	21.6	55.1	B	9.4	18 48.8	29.7	
9.5	32.7	49.1		9.0	24.3	52.1	K	9.5	37.6	15.7		9.1	26.6	48.5	B	9.1	19 18.1	38.3	*b*
9.4	6 11.7	59.4	B	9.5	23 0.6	18.7		9.5	49.0	3.7		9.4	29.8	8.0	*a*	9.5	20 12.0	38.7	
9.4	26.0	20.0		8.8	26.7	19.5		9.5	51.5	59.9	*a*	9.5	51.1	16.0		9.4	39.6	6.0	
8.2	36.3	48.4	K	9.5	39.8	32.9		9.3	45 2.1	41.4	*B*	9.3	54.0	23.2		9.5	43.8	35.6	
9.2	7 8.7	16.9	*B*	9.4	40.2	27.3	B	9.1	22.9	57.4	K	9.3	58.9	46.3	B	9.4	44.8	10.8	
8.5	10.3	48.1	K	9.5	24 22.6	6.7		7.0	32.1	31.1	Kb	9.5	4 10.3	50.6	*B*	9.1	46.8	58.3	*b*
9.4	19.3	40.9		9.3	34.9	56.3		9.1	46 2.5	9.4	B	8.4	13.0	47.4	B	9.5	48.3	37.9	
9.0	23.0	13.8		8.5	56.6	16.0	*B*	8.0	9.6	32.8	K	8.7	17.9	6.3	K	8.6	21 4.0	30.9	K
9.4	48.8	40.6		8.5	59.1	45.2	L	9.2	16.0	9.1	B	9.4	18.0	52.1		7.0	5.9	30.8	K
9.5	58.3	34.5	B	9.4	25 4.5	30.7	B	7.1	23.7	7.2	K	9.3	27.4	50.1	B	9.4	15.1	36.8	B
9.5	59.6	40.0		9.5	9.1	20.8		9.5	30.3	17.7	B	9.4	33.1	52.9	B	9.5	24.5	1.5	B
6.9	8 11.3	52.5	K	8.5	40.6	12.7	*B*	9.5	44.1	37.6		9.1	43.5	19.7	*b*	7.5	22 25.2	1.4	K
8.8	32.4	5.5	K	5.2	49.7	48.8	K	9.5	50.6	54.2		9.4	5 1.0	20.3		8.5	41.3	49.5	K
9.5	34.8	43.0		9.5	26 34.8	25.3		9.5	47 2.2	40.8		9.1	4.6	9.7		9 0	53.1	47.5	K
9.5	9 8.7	28.8		9.5	50.3	10.3	B	9.5	7.7	1.6		9.3	27.5	33.1		9.2	56.5	48.6	
7.5	10.7	48.3	Kb	9.5	27 45.9	14.9	B	9.5	19.1	14.3		9.5	34.1	21.4		9.5	24 9.1	16.6	B
9.5	59.1	55.7		9.4	28 0.1	41.8	*b*	9.5	48 0.0	15.9		8.0	50.0	46.5	L	9.5	45.6	23.6	
9.3	10 3.1	22.9	*B*	8.8	29 8.0	4.2		9.5	27.5	50.3		9.5	6 4.1	38.6		9.4	51.9	29.5	*aB*
9.2	32.4	4.8	*a*	9.5	39.1	40.1		9.3	30.1	18.0		9.2	5.6	12.9		8.7	53.4	19.1	
9.5	33.9	31.2	B	8.0	54.5	1.4	K	9.2	37.8	27.9		9.0	22.5	16.3		9.0	59.5	8.8	
9.4	37.5	22.0	B	9.3	30 38.0	37.3	Bb	9.5	57.6	55.4		9.5	41.6	15.3		9.4	25 11.6	22.9	
9.3	11 16.1	16.0		9.3	31 4.0	51.2		8.8	49 35.0	50.1	R	8.6	7 2.5	24.6		9.2	35.5	28.7	*aBb*
9.0	31.8	1.6	K	9.5	32 41.8	50.7	B	9.4	50 9.5	39.7		9.5	16.1	53.4		9.5	39.5	24.4	
9.3	48.9	55.2		9.0	57.4	56.4	K	9.3	12.8	46.9	*B*	9.2	50.8	13.9	K	9.5	26 3.3	51.0	
9.5	12 4.3	54.9		9.1	33 34.8	45.9	K	9.5	53.6	36.9		9.5	52.6	48.2		9.5	16.1	19.7	
	+	—			+	—			+	—			+	—			+	—	
10pr.	*28.33*	*1.61*		*10pr.*	*28.25*	*1.40*		*10pr.*	*28.15*	*1.10*		*10pr.*	*28.09*	*0.87*		*10pr.*	*28.05*	*0.63*	

m	3201—3260 17° ′ ″	+11° ′		m	3261—3320 17° ′ ″	+11° ′		m	3321—3380 17°—18° ′ ″	+11° ′		m	3381—3440 18° ′ ″	+11° ′		m	3441—3500 18° ′ ″	+11° ′	
9.3	27 59.6	19.8		9.4	40 56.2	28.3		9.5	56 9.8	3.1		9.5	7 16.9	6.5		9.1	15 27.6	43.4	
9.3	28 20.8	37.7		9.4	57.5	45.7		9.5	14.0	29.8		9.5	19.0	21.1		6.0	50.9	58.1	L
9.5	45.6	53.7		8.6	41 24.4	53.5	L	9.4	25.9	53.8		9.0	44.4	0.7	K	9.5	56.2	6.5	
7.8	45.8	27.9	K	9.5	54.2	49.5	—	9.5	29.2	50.4		9.5	48.6	55.3		9.1	59.1	14.6	K
7.7	29 17.3	25.2	K	9.3	57.7	44.5	K	9.5	52.4	38.1		9.5	56.0	21.2		9.5	16 21.6	15.1	
9.4	21.5	7.3		9.1	42 29.8	25.8	K	8.5	57 22.5	8.2		9.4	59.4	29.0		8.6	33.1	17.0	K
9.5	22.7	40.2		9.5	43 9.4	16.6		9.4	34.2	56.4		9.0	8 6.2	58.0	K	9.5	39.6	21.2	
9.2	57.0	46.4	K	9.3	12.8	8.3		9.3	34.4	40.8		9.3	15.4	59.2		9.5	17 11.1	16.4	
9.2	58.9	56.4	K	9.2	44 10.0	44.0	—	9.4	38.2	31.8	B	9.0	17.9	57.7	K	9.5	16.7	4.0	
8.2	30 17.2	45.7	K	9.5	10.7	23.4		8.8	53.4	26.6	B	8.6	36.1	9.6	K	9.4	26.0	17.4	
8.9	33.3	2.4	K*b*	9.5	18.3	8.8	B	9.0	54.5	39.2		8.5	48.0	48.4	R	9.5	32.3	20.8	
8.2	35.7	23.7	*B*	9.4	25.8	13.5	B	9.5	58 4.4	45.0		8.6	53.5	3.2	L	9.5	56.4	58.4	*a*
8.8	56.7	5.2	K	9.4	29.0	9.1	B	9.3	7.5	56.2		9.5	57.4	43.7		9.2	18 6.7	47.6	
8.1	31 4.7	47.4	K	9.4	36.8	12.2		9.5	27.7	15.9		9.1	9 6.9	24.5	*b*	9.5	15.4	39.3	
7.7	36.0	34.4	K	9.3	45 4.0	2.3		9.4	36.8	56.8		8.2	14.4	54.9	K	9.3	24.5	1.4	*a*
9.3	47.6	57.1		9.5	4.8	21.7		9.4	39.6	0.4		9.5	23.0	44.9		8.7	30.4	1.2	K
8.3	49.7	17.9	K	9.5	6.9	12.4		9.3	47.5	19.6		9.5	25.0	24.2		9.2	49.3	45.6	
9.5	53.2	29.9		9.2	26.7	24.8	*b*	9.4	59 12.4	54.2	B	9.5	28.1	38.6		9.5	52.8	53.7	
9.2	32 6.3	37.5	K	8.8	46 22.2	66.5	K	9.4	15.9	52.4	B	9.5	29.0	22.1		9.4	19 1.6	57.4	K
9.4	14.2	48.2		9.4	43.4	31.6		9.5	49.3	7.0		9.5	30.5	20.1		8.9	2.8	7.4	R
9.4	34.7	12.0		9.5	49.7	50.2		8.8	57.3	35.7	K	8.7	37.4	56.4	K	9.1	18.1	1.1	
9.1	46.7	54.4	K	9.5	47 13.1	37.3	B	8.8	0 2.6	19.4	K	9.5	52.0	15.4		8.9	44.8	35.6	K
9.5	33 5.1	54.2		6.5	27.7	11.0	K	9.5	12.2	46.4		9.4	54.3	14.0		9.5	51.0	29.0	
9.5	24.2	26.9		9.0	41.1	1.5		9.5	26.0	45.6		9.5	10 0.5	51.5		9.5	20 6.1	23.3	
8.9	28.8	33.4	B	9.5	43.5	13.7		9.5	31.7	53.1		8.6	17.4	26.6		8.5	6.9	26.4	K
9.5	49.6	39.2		9.0	46.0	8.4	K	9.3	48.0	26.0	K	9.5	21.2	19.6		8.4	21.8	7.2	K
9.3	34 0.9	6.8		9.5	48 19.5	4.5		9.4	1 7.8	5.0		8.7	21.4	54.8	K	9.4	29.1	30.0	K
9.0	4.7	4.9	B	9.0	20.9	24.1		9.5	29.7	28.5		9.5	25.7	13.0		9.5	51.5	53.6	
9.4	7.6	45.0		9.5	39.2	11.5		9.4	31.6	26.6		9.5	26.8	7.7		9.5	56.0	2.4	
8.7	14.5	38.8		8.5	41.2	40.3	K	9.5	47.6	32.5		9.5	29.1	35.8		9.5	21 12.5	50.6	
8.6	30.7	18.3		8.5	49 0.2	50.0	K	9.5	51.2	44.9		9.3	30.3	48.8	R	9.3	22.2	37.3	
9.4	34.4	51.7	B	8.8	29.7	36.1	K	8.8	52.4	23.0		9.5	31.2	40.0		9.5	25.5	53.6	
9.4	45.7	55.1		9.3	39.2	17.8	K	9.5	2 15.9	3.3		9.5	37.4	37.6		8.7	26.6	7.2	K
9.2	50.0	55.5	K	8.8	45.2	34.4	K	8.6	23.1	2.2	K	9.5	48.2	49.8		8.7	35.0	8.6	K
9.2	35 4.7	56.6	K	8.3	56.6	54.2	K	9.3	27.3	7.2		7.1	11 7.3	49.7	K	9.2	40.0	47.7	
9.5	24.2	45.7		9.4	50 13.9	12.8		8.4	52.0	56.5	K*b*	9.1	21.5	51.1	K	9.3	45.7	16.2	*a*K
9.5	29.1	11.7	B	9.5	31.1	45.8		9.5	59.4	10.3		7.4	25.4	20.6	B	9.5	53.8	53.8	
9.5	36 7.2	21.0		9.5	37.6	34.6		9.4	3 2.7	43.5		9.5	38.2	20.5		7.7	22 16.3	33.5	R*b*
9.5	29.9	26.4		6.5	40.0	4.8	K*b*	9.4	13.1	51.0		9.5	38.4	25.4		8.1	25.8	36.1	R
9.5	34.7	53.0		8.9	46.8	33.0		9.5	15.2	22.9		9.4	42.8	14.1		9.5	45.9	9.1	
8.8	56.7	44.4		9.4	51 4.5	46.9		9.4	18.5	3.3		9.5	12 5.5	49.2		8.0	47.0	49.4	*B*
8.7	37 9.4	39.2	L	9.4	31.0	24.3		9.0	35.1	57.7	K	9.0	8.0	53.7		9.3	53.8	54.0	
9.5	10.2	25.7		9.5	40.8	53.5		9.4	44.8	51.2		9.0	14.1	36.0		9.5	23 3.5	55.9	
9.0	18.7	53.0	L	9.5	57.5	9.3		9.3	48.7	55.3	K	9.5	14.2	46.0		9.5	5.3	57.7	
9.5	34.5	59.6		9.5	52 7.1	2.1		9.5	4 5.5	32.0		9.5	34.2	28.4		9.5	22.0	16.5	
9.5	37.2	35.1		9.2	9.8	3.3		9.4	10.6	13.2	K*b*	9.0	39.7	6.6	K	9.5	26.5	15.8	
9.5	38 1.8	2.4		8.5	35.5	48.0	L	9.5	30.6	36.6		7.3	49.5	48.8	L	8.1	28.7	6.4	K
9.0	5.2	39.9	K	9.2	52.5	50.8		8.2	38.4	30.0	L	9.5	53.0	58.2		9.5	29.4	34.3	
9.5	13.7	46.8		8.8	53 10.7	2.9		9.4	51.3	35.9		9.4	55.1	14.5		9.1	24 10.5	18.7	*a*
9.5	28.7	54.3		9.5	13.0	47.7		9.2	52.4	30.8	*a*	9.5	57.5	17.9		9.5	10.5	50.3	
7.2	39.4	13.4	K	8.8	51.7	54.1		9.5	58.0	2.4		9.5	59.4	54.9		9.5	11.7	33.6	
9.4	49.4	4.8		9.5	54 4.9	39.1		9.2	5 21.2	17.0		9.2	13 7.1	21.2		9.5	12.4	45.1	
9.5	39 45.3	22.0		8.8	14.7	4.7		8.9	26.3	2.9	K	9.5	14.1	41.7		9.0	21.5	18.7	
8.9	57.2	47.8		9.1	32.7	22.3	K	8.3	39.2	13.3		9.0	32.8	45.7		8.8	49.7	56.6	
9.5	40 18.5	35.3		7.5	46.6	17.8	K	9.5	6 5.7	19.3		9.4	14 7.7	18.5		9.5	53.8	37.5	
9.3	23.5	16.4	B	9.4	51.6	31.8	*a*B	9.4	9.5	0.7		9.5	28.8	6.6		9.5	25 0.2	20.7	
9.4	28.1	21.9		9.0	55 14.5	1.8		7.7	10.1	25.2	L	9.3	15 4.5	1.0		9.4	1.0	6.2	
9.4	29.0	28.5		9.3	22.7	5.9		9.5	40.2	3.4		9.5	22.5	23.6		9.5	28.4	7.6	
9.0	35.2	28.9	K*b*	9.4	28.5	0.0		6.9	40.7	51.2	L	9.5	24.8	44.6		9.5	33.3	19.9	
9.5	36.0	16.0	B	9.0	56 5.9	31.9	K	9.7	7 9.7	57.7		9.2	26.7	21.9	K	9.5	36.2	53.9	
	+	—			+	—			+	+			+	+			+	+	
10pr.	*28.02*	*0.37*		*10pr.*	*28.00*	*0.17*		*10pr.*	*28.00*	*0.03*		*10pr.*	*28.00*	*0.16*		*10pr.*	*28.01*	*0.31*	

	3501 – 3560					3561 – 3620				
	18ˢ		+11°			18ˢ		+11°		
m	′	″	′		m	′	″	′		
9.5	25	40.8	46.5		9.5	35	1.6	0.9		
8.8	26	0.2	31.8		9.5		13.3	26.2		
9.5		0.8	22.1		9.5		13.4	56.3		
8.8		1.7	41.8	K	8.0		19.4	37.7	B	
9.4		23.5	35.9		9.2		19.7	51.3	K	
9.5		42.3	50.7		9.5		34.6	21.8		
9.5		45.0	29.3		9.2		34.9	4.5	*b*	
9.2		45.1	26.2	K	9.5		37.4	58.2		
9.5	27	21.5	38.3		9.0		38.0	51.1	K	
8.6		21.8	16.5	K	9.5		53.4	43.6	*a*	
9.5		30.5	49.5		8.9		54.1	42.9	K	
9.4	28	6.5	22.0		9.5	36	9.0	18.5		
8.8		10.3	20.3	K	9.5		12.4	5.4		
9.4		23.2	13.5		9.5		47.8	3.3		
9.5		23.8	8.3		8.7		48.5	51.5	L	
9.5		32.0	47.5		9.5		55.5	28.3		
9.4		35.3	16.0		9.1		59.6	10.3	K	
7.5	29	11.0	36.0	*B*	9.4	37	1.6	31.3		
8.3		15.9	10.1	K	9.3		7.0	0.3		
9.5		19.9	0.3		9.5		9.1	25.3		
8.0		21.0	44.4	B	8.4		20.8	4.1	K	
9.3		22.9	52.4		9.0		22.1	36.3		
7.7		25.2	7.4	K	8.2		24.8	41.7	L*b*	
9.5		42.7	27.3		8.8		45.9	8.2	K	
9.5		47.8	55.0	B	9.5		55.0	7.3		
8.9		58.6	42.0		9.4	38	12.7	47.6		
9.5	30	7.1	42.5		9.5		24.0	18.0	*a*	
8.5		19.0	33.2		9.5		32.9	42.4	B	
9.5		23.9	51.1		8.1		40.4	27.1	K	
6.3		26.2	18.7	K	9.3		43.2	43.9		
6.5		33.2	14.1	K	9.4		50.1	2.8	*a*	
8.6		42.1	32.7	K	6.7		57.0	20.8	K	
9.5	31	0.3	28.3		9.4	39	14.1	27.2		
8.7		3.7	19.6	K	9.2		20.5	42.0		
9.2		5.1	43.7		9.5		24.2	27.9		
9.1		31.1	19.1	K	9.5		26.5	5.7		
9.5		49.9	47.0		9.5		27.1	0.8		
9.5		52.3	29.6		8.9		30.0	4.1	L	
8.7		55.9	24.5	K	8.5		50.9	58.3		
9.5		57.3	54.0		9.5		53.9	26.5		
9.5	32	1.5	40.7		9.3	40	33.4	50.3		
9.5		9.7	13.1		9.5		35.9	54.0		
9.1		26.8	2.2		9.5		37.7	12.9		
9.5		44.3	22.9		8.7		40.7	1.7		
8.9		47.2	15.4	K	8.9		44.6	44.6	K	
9.0		48.3	38.7		9.1		44.8	39.9		
8.7		50.3	26.5	K	9.5	41	0.3	54.0		
8.0		52.1	44.3	K	7.5		5.6	0.6	L	
9.5	33	1.8	7.6		9.2		17.5	19.4		
9.5		9.3	21.0		9.5		17.6	31.5		
9.5		9.5	4.8		9.2		32.9	33.8	K*b*	
9.5		31.7	16.4		9.4	42	1.5	57.2		
6.7		33.6	56.8	K	9.0		4.8	25.4	K	
9.3		36.8	40.8		9.4		12.3	42.7		
9.5		47.2	37.0		9.4		13.8	7.6		
9.4		48.1	29.0		8.7		16.2	47.1		
9.5		52.9	32.9		8.6		22.2	10.4	K	
9.4	34	26.2	52.8		9.5		35.0	6.2		
9.4		34.5	38.2		8.8		38.4	15.2	K	
9.5		44.2	39.1		8.8		44.3	59.1		
		+	+				+	+		
10 pr.		*28.02*	*0.45*		*10 pr.*		*28.04*	*0.56*		

	3621 – 3680					3681 – 3740					3741 – 3800				
	18ˢ		+11°			18ˢ–19ˢ		+11°			19ˢ		+11°		
m	′	″	′			m	′	″	′		m	′	″	′	
8.0	42	49.7	29.9	K		7.7	51	22.2	49.7	L	8.8	0	33.6	23.6	K
9.5		50.4	34.4			9.5		47.0	22.1		9.4		36.2	30.2	
9.5		52.5	10.6	*a*		9.5	52	41.6	57.4		9.1		40.3	26.0	K
7.9	43	0.7	0.5	L		9.5		42.6	24.8		9.4	1	21.3	20.6	
9.5		1.1	25.9			9.5		49.3	36.8		9.5		24.8	15.6	
8.3		1.8	39.3	*B*		9.5		55.0	46.6		9.4		32.5	48.5	*a*
9.3		8.2	1.2			9.0		55.4	12.8	K	9.5		48.6	51.2	
9.5		12.9	55.9			8.6		56.4	51.9	K	9.5	2	0.6	42.6	
9.5		14.1	45.8			8.0	53	3.1	14.7	K	6.6		9.5	4.2	L
7.3		28.3	21.3	K		9.5		28.7	36.4		9.0		24.6	21.0	
9.5		40.5	13.0			9.0		51.5	32.8		8.1		26.3	38.2	S*b*
9.5		43.5	19.2			9.5	54	5.9	25.5		7.4		31.3	24.1	L
9.5	44	1.0	46.2			9.5		6.9	42.1		9.5		49.9	50.5	
9.3		34.1	42.5			9.4		11.6	42.8	*a*	9.3		51.0	11.5	
9.4		36.0	20.1			9.5		18.0	57.2		9.5		52.7	7.2	
9.2		49.4	3.7			9.5		27.6	23.0		8.5	3	2.4	59.4	K
9.1		51.9	12.2			9.0		33.8	24.4		9.5		35.4	42.4	
9.4	45	6.5	18.6	B		9.2		35.5	37.0	B	9.2		44.2	55.9	K
9.1		17.1	20.9			8.2		35.8	45.1	B	9.5	4	15.7	43.3	
9.5		19.0	5.2			9.5		40.3	35.3	B	9.5		25.5	11.1	
9.5		19.9	39.4			9.5		41.2	28.3		8.8		36.2	17.6	
8.5		20.6	37.1	K		9.4		42.8	31.8	B	9.3		36.9	43.0	K*b*
9.4		22.1	16.6			8.9		45.8	23.6		8.1		52.6	45.8	K
9.4		35.5	22.1			7.7	55	0.1	15.1	B	8.8	5	4.0	6.5	K
9.5		42.0	2.6			9.4		13.7	48.9		9.5		7.9	57.8	
9.5		56.0	20.6			9.5		15.8	0.7		7.8		15.7	14.5	K
9.2	46	4.5	59.9	K		9.5		47.2	2.6	B	9.4		20.3	27.4	
9.1		5.8	40.6	K		9.5		49.0	33.4		9.0		22.5	49.7	L
9.5		7.7	30.9			9.5	56	21.3	55.0		9.5		29.9	41.3	*a*
9.5		9.5	12.2			9.5		29.7	12.7		9.5		39.4	42.0	*a*
8.9		13.9	26.7			9.2		40.1	34.7	*b*	8.3		50.6	48.6	L
8.9	47	0.7	32.6			9.5		54.8	20.8		9.3		57.8	57.5	
9.0		8.9	17.8			7.2	57	11.8	5.5	L	9.5	6	20.6	12.0	
9.2		32.8	7.2			9.5		24.8	25.2		7.7		22.6	46.8	K
9.5		42.9	18.4			9.4		25.9	59.8		6.9		35.4	6.5	K
8.8		43.4	17.5	B		9.4		27.0	16.4		9.5		49.8	54.3	
9.3		45.2	17.8	B		9.5		31.1	7.9		9.4	7	20.7	33.7	
8.4		45.4	53.0	K		9.5		46.4	9.9	B	7.0		30.1	27.9	K
8.9		46.5	34.5			9.3		50.0	59.8	*a*	9.5	8	42.0	31.4	
9.5		54.9	52.0			9.3		57.7	7.3		8.0		44.5	18.7	K
9.5		55.9	42.7			9.3		58.0	22.1	*a*	9.5		48.2	43.1	
9.3	48	12.5	19.5			9.5	58	7.0	32.5		8.5		56.3	34.9	L*b*
9.5		27.6	32.8			9.5		20.1	40.8		9.5	9	15.7	39.1	
9.5		31.9	26.8			9.5		30.5	33.5		9.5		27.0	14.6	
9.3		38.0	6.7			9.2		38.8	57.4		9.5		29.0	20.7	
9.5		40.5	5.5			9.1		40.0	21.6		9.0		52.9	24.2	L
9.5		41.2	52.9			7.5		41.6	3.0	K	8.0		56.4	35.3	K
9.4		47.0	29.1	B		8.5		46.3	25.4		9.5	10	53.3	16.1	
9.5		56.2	41.6			9.5		46.3	53.4		9.1		55.8	30.9	
9.5	49	6.1	44.9			9.5		54.5	53.3		5.4	11	0.9	20.5	K
9.5		12.1	9.6			9.4		59.0	55.7		9.3		8.6	2.2	
9.5		26.9	24.4			8.0	59	2.3	59.8	K	8.5		18.1	36.2	
9.5		29.3	34.7			8.9		32.6	51.0	K	8.8		22.7	20.2	K
9.5		38.2	35.6			9.5		33.5	24.3		8.6		35.8	54.6	K
9.5	50	13.1	25.7	*B*		9.2		50.5	20.0	K	8.6		55.9	23.6	K
9.5		21.8	26.0	B*b*		9.5		57.8	53.3		9.4	12	3.0	6.6	
9.5		28.9	48.6	*a*		9.5	0	0.7	28.5		9.5		30.2	5.6	
9.5		46.0	7.3			9.1		9.5	13.0		9.2		33.7	50.0	
9.5		53.3	28.0			8.7		18.3	24.7	K	9.5		33.7	10.7	
9.5	51	17.7	29.7			9.0		23.6	49.0	K	8.8	13	2.1	56.0	
		+	+					+	+				+	+	
10 pr.		*28.05*	*0.67*			*10 pr.*		*28.08*	*0.82*		*10 pr.*		*28.11*	*0.95*	

19ʰ +11°

3801—3860

	19ʰ	+11°	
m	′ ″	′	
7.5	13 3.6	46.7	Kb
6.2	4.0	15.7	B
9.5	45.2	8.1	
9.5	14 3.5	9.7	
8.8	4.2	39.1	K
9.5	8.7	57.8	
9.1	9.8	44.1	K
9.5	32.4	27.4	
9.4	45.7	16.5	
9.5	47.8	45.4	
8.5	57.7	48.3	K
9.5	15 2.8	20.0	
9.2	30.9	13.4	b
9.5	31.2	24.5	
9.4	36.5	57.5	
9.3	39.4	14.4	
9.0	16 11.0	45.3	
9.5	25.9	42.3	
9.5	35.2	49.7	
9.4	47.2	21.7	
9.3	50.9	33.8	
9.2	56.8	4.9	
9.5	17 0.3	56.9	
9.5	2.4	7.7	
9.1	11.2	50.4	
7.7	14.9	9.5	K
9.4	26.4	15.2	
9.5	32.4	37.7	
9.0	48.1	44.5	
9.5	56.8	19.6	
9.5	59.8	57.9	
9.0	18 1.4	58.3	K
5.5	3.4	38.7	Lb
8.7	4.0	40.6	
8.9	34.9	23.7	K
9.5	46.5	16.7	
9.5	49.3	49.6	
9.5	19 6.5	4.0	
9.5	29.0	21.8	
7.5	42.4	33.7	K
9.4	56.5	0.6	
7.2	20 9.7	46.8	K
8.9	25.7	20.8	
9.5	41.7	47.1	
9.5	43.2	8.6	
9.4	48.3	21.2	
9.4	21 5.5	9.2	
8.8	17.6	28.8	
8.8	24.0	47.9	
8.9	37.1	46.9	
9.5	46.4	34.4	
8.7	47.7	14.4	
9.0	22 27.3	19.5	K
9.5	31.9	34.1	
9.5	32.7	55.9	
9.5	37.9	33.8	
9.5	43.6	21.8	
9.5	45.0	30.1	
9.5	49.1	17.6	B
9.3	23 1.5	54.9	
10pr.	+ 28.15	+ 1.11	

3861—3920

	19ʰ	+11°	
m	′ ″	′	
9.5	23 19.5	38.3	
8.6	21.2	13.8	K
9.3	39.5	29.5	
9.0	39.5	17.4	K
9.0	40.5	16.9	K
9.3	49.1	18.1	K
8.7	55.2	52.5	
9.1	24 4.0	19.4	K
9.4	18.7	4.7	
9.5	19.7	7.4	
8.0	36.6	20.1	K
9.5	39.3	4.3	
8.3	47.2	25.1	K
9.2	25 14.3	34.9	R
9.5	16.1	11.9	
9.5	16.6	47.6	
9.5	25.4	3.1	
9.5	28.0	11.3	
9.5	31.9	52.2	
9.5	41.9	37.9	
9.5	44.1	13.2	
8.1	48.9	44.1	Kb
9.3	26 7.1	17.8	
9.5	22.0	3.8	
9.0	22.8	26.4	
9.4	26.7	17.9	
9.4	32.6	34.2	aR
9.5	55.3	9.8	
9.4	55.3	29.0	
9.5	27 12.4	42.1	
9.5	23.8	24.8	
9.5	25.5	10.1	
8.1	49.3	35.8	B
9.5	58.5	19.0	
8.0	28 2.9	6.6	B
9.3	3.6	27.0	
8.8	6.5	59.5	K
9.5	12.2	6.4	a
9.5	24.5	48.2	
9.5	26.2	24.1	
8.0	34.6	37.4	B
8.7	37.1	7.5	B
9.5	38.0	29.3	
9.4	29 6.8	26.8	
9.5	17.5	57.7	
7.0	23.9	50.7	K
9.4	34.8	5.3	
9.1	36.6	42.9	K
9.5	38.4	32.1	
9.4	46.3	19.6	
9.5	46.4	8.3	B
8.6	48.5	59.8	L
9.4	49.8	11.0	
9.4	30 12.0	8.0	B
9.4	21.1	7.3	
8.9	30.8	28.9	
9.5	46.7	10.4	
9.2	50.2	4.0	Kb
*9.5	31 2.1	17.8	
*9.2	17.9	49.4	B
10pr.	+ 28.19	+ 1.23	

3921—3980

	19ʰ	+11°	
m	′ ″	′	
9.4	31 34.2	32.4	
9.2	42.0	24.8	
9.2	50.3	9.4	
9.4	57.5	55.5	
9.2	32 8.8	4.0	
9.5	10.5	26.6	
9.5	13.5	49.3	
9.3	21.0	31.8	aB
9.3	33.9	32.0	B
9.2	36.0	57.8	K
9.0	36.9	34.1	
9.2	37.7	20.1	
9.3	37.8	11.0	
9.3	54.4	55.1	
8.9	57.3	48.7	K
9.3	33 12.7	5.4	
8.8	18.0	19.8	
9.1	28.3	51.6	K
9.4	55.2	6.3	
9.5	58.4	49.0	
9.2	34 1.7	2.0	b
7.8	4.6	35.1	K
9.1	11.5	54.0	B
9.5	15.9	59.2	
9.5	20.5	8.4	
8.8	23.9	44.2	K
9.0	28.2	37.4	K
9.2	33.1	29.2	K
9.5	36.8	12.4	B
9.5	45.2	47.9	
9.2	50.0	30.0	K
9.4	51.1	31.9	
9.1	35 13.1	30.1	aB
6.9	24.6	51.7	L
5.7	44.1	28.9	K
9.4	36 19.8	24.5	
7.8	26.9	40.8	K
9.5	38.5	12.0	B
9.4	43.5	55.8	K
8.0	45.6	51.8	
9.5	55.2	44.4	
9.5	37 13.5	3.7	
9.3	26.9	35.7	
9.4	31.9	2.1	
9.5	43.5	18.4	
9.4	38 28.3	46.9	
9.5	28.9	4.3	
9.4	36.2	8.8	
9.3	45.1	18.0	
9.3	47.3	56.6	
9.4	59.6	25.6	
9.5	39 5.6	37.3	a
9.5	14.3	31.6	a
9.5	21.4	29.1	
9.5	37.8	55.0	
9.4	38.5	40.7	
9.4	40.4	36.9	B
8.4	41.4	24.1	B
9.5	40 0.3	16.6	
9.0	3.5	39.0	
10pr.	+ 28.22	+ 1.34	

3981—4040

	19ʰ	+11°	
m	′ ″	′	
8.6	40 11.9	33.7	
8.7	16.0	49.1	K
9.4	17.8	14.2	
8.4	25.5	6.9	
9.3	28.8	20.1	
9.5	29.5	0.9	
9.2	30.5	52.8	K
9.4	34.7	24.5	
9.5	51.5	45.9	
9.5	41 15.0	21.0	
* 9.5	26.4	50.7	
9.5	29.9	37.1	
9.5	34.2	56.9	
5.8	51.9	27.7	Kb
9.4	42 1.2	52.4	B
6.8	3.0	19.5	K
9.5	7.0	52.9	
9.5	8.2	4.6	
9.5	24.9	17.1	
9.5	25.6	44.0	B
9.5	44.4	40.7	
9.5	43 1.5	14.2	
8.0	15.7	25.1	K
9.4	18.2	21.5	
9.4	32.8	17.2	
9.5	43.0	25.3	
9.2	46.8	6.1	
9.4	47.6	0.8	
9.2	48.5	15.6	
9.4	55.1	47.6	aB
9.5	44 8.6	40.1	
9.4	10.2	25.4	
8.9	14.5	2.2	K
9.5	16.6	15.1	
9.5	38.7	6.2	
9.5	50.5	53.6	
9.5	53.3	39.2	
8.2	45 14.8	4.3	B
6.5	16.2	15.9	P
9.3	19.2	58.3	B
9.3	25.6	33.1	
9.4	26.0	6.1	
8.6	26.4	53.7	K
9.0	48.3	51.8	K
8.5	54.4	48.5	Kb
9.2	56.8	40.2	
8.9	46 14.5	2.8	
9.5	14.9	46.5	B
9.5	19.8	42.3	B
8.4	28.0	27.4	
9.5	28.2	37.4	
9.5	37.6	36.0	
9.1	40.6	42.3	B
8.3	47.7	6.5	K
8.3	50.5	13.6	K
9.2	57.6	6.3	a
9.4	47 8.1	56.6	
9.4	33.1	35.3	a
9.2	33.9	12.3	
9.1	52.6	19.3	b
10pr.	+ 28.28	+ 1.46	

4041—4100

	19ʰ	+11°	
m	′ ″	′	
9.3	47 53.7	53.0	
9.5	57.1	59.6	
9.4	48 6.1	3.9	
9.5	8.2	8.8	
9.1	10.7	14.8	
8.9	15.1	0.3	
9.5	20.3	30.9	
8.2	22.6	34.7	P
9.5	31.3	8.4	
9.2	34.4	25.8	
9.5	59.4	6.4	
9.1	49 13.6	32.8	K
9.2	16.7	17.1	
9.5	18.7	28.0	
5.5	22.2	2.6	Kb
9.5	31.4	8.4	
9.0	54.5	42.0	
9.5	50 8.0	52.4	
9.3	17.1	23.7	B
9.0	18.2	33.2	B
8.9	26.0	32.8	B
9.5	28.6	55.6	
9.1	44.3	12.2	K
9.5	59.2	42.2	
7.5	51 4.0	1.7	K
7.5	4.3	12.2	K
9.4	46.6	46.1	
9.3	57.4	13.4	K
9.3	59.8	43.6	B
8.2	59.9	10.6	K
9.4	52 7.2	39.2	
9.5	33.9	57.6	
9.5	37.3	5.3	
9.0	44.4	52.6	
9.2	44.8	29.8	R
9.1	45.8	49.7	a
9.5	47.1	42.7	
8.8	53 13.7	25.4	K
8.6	26.6	34.1	
9.2	34.8	54.6	
8.9	36.9	40.1	R
9.0	39.7	27.6	K
9.4	51.4	0.2	
9.5	57.7	31.7	
9.3	59.5	44.4	
9.0	54 4.3	19.8	K
9.4	8.8	8.6	B
9.3	9.8	17.0	B
9.5	16.3	46.0	
9.0	17.7	35.1	
9.5	24.2	59.3	
9.5	38.7	9.0	
8.7	39.3	48.9	B
8.9	39.5	32.2	K
9.5	44.2	42.3	
9.5	51.2	43.2	
9.5	57.7	6.8	
8.9	55 5.3	44.9	K
9.5	12.6	23.5	
9.1	16.7	55.5	a
10pr.	+ 28.31	+ 1.57	

3919a var | 31 10 | 23 |

3990a 9.6 | 41 23.5 | 15.2 | B

4101—4160

	19m—20m	+11°	
m	′ ″	′	
9.5	55 30.6	30.8	
9.4	46.7	24.9	
9.5	49.3	3.8	
6.8	51.7	57.2	K
9.5	56 1.0	40.2	B
8.6	7.6	59.9	K
9.5	13.7	48.5	
9.2	19.8	41.5	
9.5	26.2	38.3	
8.5	28.2	45.8	K
8.8	57 9.2	55.9	K
9.5	16.0	21.1	
9.4	16.1	33.6	
8.0	18.1	23.9	L
9.5	28.7	30.1	
9.5	35.6	18.4	
7.8	44.2	13.9	L
9.5	58.4	35.7	B
9.3	58 17.9	53.5	
9.1	18.6	42.4	
9.0	23.2	21.1	
9.2	27.1	59.9	
9.5	40.0	25.0	
9.0	47.0	57.6	B
9.1	50.8	57.5	αB
9.0	50.8	45.5	
8.7	55.2	11.2	K
9.3	59 0.4	23.7	
9.3	18.6	49.8	
8.5	30.3	38.6	
8.2	50.1	48.6	L
9.5	53.4	41.2	B
9.1	58.8	16.4	B
9.3	0 0.5	15.8	B
9.4	6.0	46.6	
9.5	7.7	20.0	
9.0	8.7	54.5	
9.0	16.8	57.0	
9.1	26.1	33.7	
9.4	26.2	16.0	B
9.2	30.6	48.6	
9.4	40.4	20.1	
9.0	40.8	52.6	
9.1	57.2	55.4	K
9.5	58.7	59.7	
8.0	1 28.1	18.1	B
7.8	30.4	10.7	K
9.0	33.3	10.4	
9.1	44.7	50.6	K
9.0	48.9	58.2	K
9.5	53.3	7.7	
9.5	55.2	16.6	
7.0	59.1	49.6	K
8.5	2 12.3	57.9	L
9.0	17.9	5.2	
9.5	46.6	12.5	
9.5	48.3	18.8	
9.5	3 3.1	24.5	
9.4	14.7	33.5	
9.5	20.2	52.8	
10 pr.	+ *28.36*	+ *1.67*	

4161—4220

	20m	+11°	
m	′ ″	′	
9.4	3 29.7	5.3	B
8.7	29.9	6.3	K
9.5	34.9	30.7	B
9.5	47.5	54.1	
8.9	56.4	44.8	K
9.3	4 15.1	52.7	
8.5	27.6	57.9	K
8.9	44.7	17.8	B
9.4	49.8	54.0	
9.1	50.1	50.3	K*b*
9.4	5 10.9	14.7	
9.5	18.8	56.1	
9.5	20.7	25.2	
9.2	22.1	34.2	
9.5	32.2	11.5	
9.5	50.1	33.5	*B*
9.5	53.9	56.9	
9.0	55.4	44.5	
9.5	6 9.4	1.9	
6.3	11.9	24.9	L
9.5	21.6	26.3	
9.4	7 1.2	33.8	
9.2	6.7	42.1	
9.2	12.2	56.1	
9.3	49.1	44.1	
9.5	56.8	25.6	
9.4	57.0	8.3	B
9.3	8 12.8	16.4	B
9.5	18.5	41.6	
9.3	35.0	21.5	
9.5	46.9	1.1	
9.4	9 7.6	9.8	
8.5	9.7	31.5	K
9.0	16.2	4.3	
9.5	22.3	25.7	
9.4	26.3	7.5	
9.4	39.6	36.9	
8.3	41.6	28.7	K
9.5	46.4	52.0	
9.2	47.1	23.5	K
9.2	47.1	0.7	K
9.0	55.6	4.5	K
9.4	10 25.2	15.3	*R*
8.3	32.1	45.8	K
9.5	50.2	41.0	
9.4	52.7	12.5	
9.4	11 7.0	12.9	
9.5	13.1	7.0	
9.1	22.0	5.5	
9.5	29.9	58.4	
9.5	43.3	1.1	
9.5	47.4	37.6	
8.7	12 7.4	59.2	L
9.4	15.2	9.1	
9.4	29.9	48.6	B
9.3	32.4	55.5	B
8.4	35.2	40.7	L
9.4	38.3	53.1	B
9.5	51.8	43.5	
8.2	55.4	59.2	L*b*
10 pr.	+ *28.41*	+ *1.78*	

4221—4280

	20m	+11°	
m	′ ″	′	
9.5	12 56.5	35.8	
9.5	58.1	40.0	
9.3	13 0.6	24.0	
9.5	5.7	28.0	
6.6	16.2	1.0	B
9.5	24.6	37.2	
9.5	29.1	26.6	
9.5	34.2	27.0	
9.4	49.0	40.3	
9.3	59.0	52.2	B
9.5	14 0.8	47.5	B
9.5	8.1	58.7	
9.4	9.1	36.5	
8.9	42.6	0.3	
9.3	15 0.2	31.8	
9.3	15.9	16.3	
9.4	19.1	12.1	
9.4	21.1	14.1	αB
9.3	34.8	54.0	B
9.4	35.8	51.5	
9.5	40.2	23.1	
9.3	43.8	2.4	
8.2	50.7	14.3	K
7.2	53.8	59.6	*B*
9.4	58.5	6.8	*R*
9.5	16 12.1	45.8	
9.3	14.7	27.0	
8.8	21.2	38.6	K
9.5	17 3.4	49.7	
8.5	34.1	45.1	
9.3	42.6	5.0	
9.5	51.9	50.4	
9.5	18 9.7	21.8	
8.8	32.1	29.4	
9.4	43.2	48.6	
8.6	44.9	36.9	B
9.5	58.0	28.7	
9.0	19 5.6	41.7	B
9.4	10.9	43.4	
9.3	23.3	13.2	
9.2	52.7	48.1	K
9.5	20 2.6	35.1	
9.0	2.8	7.6	
9.5	3.4	5.6	B
9.5	12.0	41.6	
9.5	21.0	12.6	
9.2	50.3	9.9	K*b*
9.5	21 0.0	54.5	
9.5	7.5	54.0	
9.3	28.8	1.9	
9.5	30.3	33.4	
9.2	31.7	40.9	
8.0	33.2	14.0	K
9.5	38.1	18.7	
9.4	47.5	3.0	
8.9	54.9	36.0	K
9.4	57.5	10.9	K
9.3	22 18.4	50.7	
9.5	35.0	23.6	
9.4	40.4	58.8	
10 pr.	+ *28.47*	+ *1.89*	

4281—4340

	20m	+11°	
m	′ ″	′	
9.5	22 50.8	48.7	
9.5	55.5	24.2	
9.5	23 1.3	1.7	
9.5	11.7	50.0	
9.5	13.5	40.7	
9.3	27.9	33.7	B
9.5	32.6	3.5	
9.5	45.6	32.3	
8.9	51.4	36.5	B
9.5	24 2.0	22.6	
9.5	9.5	43.9	
9.1	17.2	46.9	
9.5	22.1	36.2	
9.2	22.3	29.7	
9.5	31.8	58.2	
9.5	49.2	14.4	
9.2	25 14.0	46.4	
9.4	26.9	7.4	
9.0	32.0	21.3	
9.5	35.1	1.0	
9.0	59.0	34.1	
9.3	59.7	13.1	
9.3	26 1.7	54.6	
9.1	5.6	44.9	
9.5	12.2	24.2	
9.5	25.0	19.4	
9.1	25.9	56.9	b
9.1	34.2	48.2	
9.5	54.7	54.3	
8.9	27 1.9	28.7	K
8.6	3.1	36.7	K
9.4	25.0	53.4	
9.4	31.4	7.7	
9.5	28 22.0	45.6	
9.5	22.0	53.0	
9.4	26.7	41.5	
9.5	29.7	2.3	
9.4	35.0	15.4	*a*
9.5	43.4	5.7	
9.5	47.3	58.6	
9.4	56.8	43.6	
8.9	29 17.3	12.3	K
9.5	22.3	26.0	
9.5	24.2	54.8	B
9.3	28.0	45.4	
9.1	41.2	5.5	K
9.5	49.3	59.9	
9.3	49.8	50.7	
9.5	56.6	54.5	
9.5	59.0	0.2	
8.2	30 5.8	33.1	K
9.5	6.3	43.8	
9.5	15.7	4.8	
9.2	25.8	21.2	K
8.7	48.8	56.2	K
9.5	31 3.0	44.4	
9.5	7.2	54.7	
9.3	7.8	49.8	
8.8	32 6.7	41.6	
9.1	14.1	2.1	*R*
10 pr.	+ *28.54*	+ *2.00*	

4341—4400

	20m	+11°	
m	′ ″	′	
9.4	32 40.3	7.5	B
9.5	48.3	38.6	
9.5	33 10.8	46.1	
9.5	16.7	14.9	
9.4	36.8	17.3	
9.3	42.4	9.4	B
9.5	56.6	40.0	
9.3	58.8	30.9	
9.5	34 3.1	36.4	
9.0	8.0	17.3	B
9.4	12.0	20.1	
8.3	24.2	58.6	K
9.4	31.7	26.2	
9.5	38.3	34.8	
7.7	46.0	3.9	Pb
9.4	47.3	24.8	B
9.3	52.9	1.9	
9.5	58.2	19.6	
9.4	35 4.4	2.9	
8.4	37.8	56.8	L
9.4	36 1.3	59.1	
9.5	10.6	15.8	*a*
9.0	14.7	13.8	
9.3	37 28.3	33.1	
9.4	28.6	8.2	
9.5	35.7	53.6	
9.0	53.8	27.0	
6.1	38 0.2	47.9	L
8.1	11.0	15.5	B
8.5	12.3	18.8	*B*
8.5	12.5	29.3	
9.5	14.2	2.6	
9.5	31.3	26.9	
7.8	39.0	7.5	L
9.5	57.2	54.1	
9.5	40 2.3	27.0	
9.5	5.2	52.0	
9.2	12.8	19.1	*b*
9.4	20.7	43.8	
9.5	21.5	35.1	
9.3	34.2	55.9	
9.5	35.5	19.7	B
9.4	42.8	15.7	B
9.3	48.2	54.6	B
9.0	41 5.0	0.4	
9.4	5.3	43.7	
9.5	28.0	0.8	
9.5	31.3	8.4	
7.5	56.7	20.0	K
9.5	57.5	49.9	
9.5	42 45.6	49.2	
9.5	47.1	5.7	
9.4	55.3	31.0	B
8.0	43 2.8	21.7	K
9.4	8.5	35.8	
9.5	12.0	4.0	
7.8	15.3	33.1	K*b*
9.3	22.3	15.4	B
9.5	27.8	16.6	
9.5	44 7.3	39.3	
10 pr.	+ *28.63*	+ *2.13*	

4401—4460

	20°	+11°	
m	′ ″	′	
9.2	44 12.4	24.1	B
9.2	14.7	48.9	
9.2	19.8	13.1	
9.5	22.2	4.2	
8.2	47.0	30.0	L*b*
9.0	58.3	43.4	
9.0	45 0.3	42.0	
9.5	24.1	39.7	
9.0	35.5	52.9	
9.2	46 3.4	4.0	
9.5	15.7	36.5	
8.9	21.5	29.0	
9.5	25.2	3.6	
9.5	43.3	34.2	
8.1	44.4	9.4	L
9.5	57.2	28.7	
9.2	47 3.0	22.0	
9.1	4.0	11.5	
9.5	17.3	24.1	
7.5	29.7	31.4	K
9.5	48.1	51.2	
9.5	48 3.0	5.1	
9.2	41.3	49.0	
9.1	47.5	16.5	
9.5	55.3	56.2	
9.5	58.1	32.0	
8.7	49 7.1	5.0	
9.4	9.9	5.7	*a*
8.7	45.8	19.5	
9.5	50 11.6	24.5	
9.4	16.7	55.0	
9.5	16.8	50.9	
9.3	19.8	45.8	K*b*
9.1	37.6	16.5	K
9.4	51 7.1	6.2	
9.0	7.4	58 9	L
8.8	16.4	13.6	K
9.4	37.6	58.6	B
9.0	39.3	40.9	B
9.2	40.6	56.9	
9.5	49.7	6.1	
9.5	51.2	18.8	
9.3	52 2.0	45.7	
9.4	18.6	3.0	
9.2	21.6	28.5	
8.8	24.5	6.0	K
9.4	41.1	20.6	B
9.5	53 22.3	2.1	
9.5	34.3	39.3	
9.1	56.8	56.7	
9.5	54 10.7	40.9	
7.8	13.3	23.6	K
9.4	15.9	6.1	
9.5	34.0	50.2	
9.5	55 21.9	34.8	
8.4	40.5	55.8	
7.2	42.7	5.8	K
9.5	56 6.8	53.9	
9.5	10.5	7.3	*a*
9.5	23.3	25.9	
10pr.	+ 28.72	+ 2.26	

4461—4520

	20°—21°	+11°	
m	′ ″	′	
9.2	56 38.2	50.1	
9.4	41.5	29.2	
8.9	46.7	26.6	
9.4	47.9	1.5	*a*
8.8	57 7.6	11.7	K
9.3	21.9	1.2	*a*
9.4	37.1	56.1	
7.6	40.6	27.2	L
8.6	56.4	1.7	B
7.5	57.4	52.5	L
8.7	58 7.5	35.8	
9.5	24.9	6.9	
9.4	59 10.6	37.2	*a*
9.5	11.9	50.3	
9.2	31.5	15.7	K
9.4	35.6	40.7	
9.3	38.9	57.1	
9.0	39.2	12.9	K
9.3	41.3	2.3	
9.4	44.1	4.9	
9.2	44.6	34.6	*ab*
9.5	0 2.3	53.5	
9.5	7.3	18.8	
9.5	17.0	21.5	
9.4	49.4	28.7	
8.8	1 3.6	14.6	K
9.5	12.4	28.4	
8.2	50.9	5.1	K
9.5	2 12.8	33.7	
9.0	18.6	11.8	K
9.5	20.2	40.0	
9.5	22.6	31.5	
9.4	26.2	56.8	
8.8	3 11.4	52.4	K
8.1	14.2	58.0	K
9.0	14.7	48.3	
8.4	15.6	41.0	K
9.5	53.5	21.2	
9.5	4 28.5	12.6	
9.5	31.0	0.7	
9.4	43.3	51.2	
7.1	5 14.5	11.3	K
9.4	35.0	6.2	
9.5	54.2	27.0	
9.4	59.4	35.4	
8.9	6 14.6	11.0	K
9.5	31.5	19.5	
9.2	43.8	59.5	B
9.0	43.8	46.5	
8.7	56.8	4.6	
9.3	7 3.4	14.5	
9.5	16.5	54.8	
9.4	21.6	22.1	
9.5	32.9	32.7	
9.5	33.6	19.7	
9.4	35.5	33.7	
9.2	49.8	43.8	*a*
9.0	57.3	52.3	
9.5	8 1.0	1.0	
9.5	5.7	29.4	
10pr.	+ 28.82	+ 2.38	

4521—4580

	21°	+11°	
m	′ ″	′	
9.5	8 40.0	52.8	*aB*
9.5	40.8	19.8	
9.5	50.3	56.6	
9.3	9 5.6	46.9	
9.5	32.2	43.5	
8.4	34.3	42.0	*B*
9.3	36.0	47.3	
8.2	49.6	43.9	B
9.4	58.8	1.4	B
8.8	10 21.4	1.6	K
8.8	33.0	44.7	
9.2	33.4	54.7	
9.4	35.4	50.8	
9.4	46.5	1.0	
9.5	47.0	19.1	
9.5	11 40.3	30.3	
9.5	12 1.1	37.8	
9.4	16.8	19.1	
9.5	13 2.6	42.6	
9.2	2.7	39.7	
8.0	26.6	31.8	L
9.1	34.3	14.6	*b*
9.5	47.4	41.7	
9.5	48.1	57.2	B
9.5	54.1	40.1	
9.5	14 2.1	44.5	*b*
9.1	24.4	48.6	
9.5	43.2	16.8	
9.3	15 31.4	29.4	
9.5	44.8	5.8	
9.4	55.9	40.0	
9.4	16 11.6	16.5	
9.5	15.5	56.5	
9.1	43.6	35.3	*b*
9.3	43.8	40.9	
9.5	17 34.8	40.1	
9.3	58.6	39.3	B
9.4	18 13.1	17.4	
8.0	30.8	1.9	L
9.5	50.7	31.8	
9.5	58.8	30.4	
9.3	19 2.9	47.1	
8.5	5.4	53.1	
9.5	27.0	5.8	
8.7	31.7	34.8	K
8.6	20 10.4	22.6	
8.5	16.6	35.3	K
9.4	25.0	41.1	
9.5	21 0.6	6.1	
9.5	57.1	53.0	
9.5	22 5.3	33.8	
9.4	11.0	36.5	
7.5	11.0	19.3	*B*
9.4	31.2	17.5	
9.1	33.3	3.6	K
8.7	40.4	48.5	
neb	59.6	31.4	L
7.8	23 10.0	38.7	K
9.5	23.2	28.6	
9.5	42.3	42.6	
10pr.	+ 28.93	+ 2.52	

4581—4640

	21°	+11°	
m	′ ″	′	
9.4	23 53.5	2.9	
8.2	56.4	55.5	*B*
6.0	24 8 7	30.6	K*b*
8.9	29.4	25.4	
9.0	34.8	15.4	
9.5	34.8	3.3	
8.5	39.9	36.4	K
9.3	49.0	16.6	
9.5	57.4	14.6	
9.2	25 28.7	38.8	
7.8	31.6	12.3	K
9.4	41.4	19.7	
8.6	43.6	15.6	K
9.4	43.8	11.1	
9.5	55.2	46.9	
7.0	58.7	53.5	K
9.0	26 2.9	58.2	K
9.5	18.6	40.3	
9.3	40.0	4.9	
8.6	27 4.6	35.0	L
7.9	23.7	36.8	L
9.4	39.2	9.2	
9.5	52.5	17.6	
9.3	28 12.1	52.3	
9.5	31.4	27.0	
9.4	29 9.3	30.2	
9.1	14.6	56.9	*b*
9.2	15.6	28.7	
9.0	24.6	11.9	
9.2	24.9	45.0	
9.5	33.5	39.0	
8.0	41.4	13.5	K
7.0	30 4.8	3.9	K
9.5	19.5	59.8	
9.4	22.6	45.3	
9.1	56.7	41.6	*b*
9.4	31 5.6	37.2	
9.4	22.7	9.2	
8.6	30.2	35.1	
9.4	34.5	48.2	
9.5	54.0	21.5	
9.5	32 0.4	14.6	
9.4	1.0	6.3	
9.4	27.6	24.2	*a*
9.5	35.8	2.6	
8.8	33 0.0	26.4	K*b*
9.5	2.5	34.5	
9.3	28.6	57.1	
9.5	42.6	29.4	
9.4	34 21.7	27.1	
9.4	23.4	35.7	
9.4	29.2	30.2	*a*
9.5	43.1	33.6	
9.3	44.6	28.5	
9.1	35 12.4	11.6	*ab*
9.3	18.1	8.8	
9.0	20.5	53.7	
9.5	25.5	51.9	
9.4	32.0	41.0	
9.1	52.6	37.0	
10pr.	+ 29.06	+ 2.64	

4641—4700

	21°	+11°	
m	′ ″	′	
8.2	36 15.3	52.0	K
9.1	31.5	42.7	K
9.3	42.4	43.6	*a*
9.5	37 20.0	13.9	
9.5	21.3	1.2	
9.1	24.8	0.3	K
9.5	37.8	33.4	
9.5	45.3	10.2	
9.5	59.8	2.6	
9.3	38 1.6	53.8	
9.4	40.1	55.0	
8.8	41.8	46.7	
8.5	52.8	13.4	K
9.5	53.0	35.9	
9.4	39 3.1	21.9	
9.5	47.6	4.5	
9.1	54.4	59.3	*b*
9.5	59.5	11.3	
9.5	40 5.6	22.5	
9.5	7.5	23.6	
9.5	12.9	26 0	
9.2	27.7	37.2	*b*
9.5	49.0	5.3	
8.7	56.7	5.7	K
9.5	41 27.2	6.6	
9.5	42 39.5	20.5	
9.2	42.4	11.7	*b*
9.5	58.5	30.5	
9.4	43 18.3	37.1	
9.5	24.6	7.7	
9.4	27 5	53.6	
9.5	45.9	14.0	
7.7	59.8	56.9	K
9.5	44 7.3	4.5	
9.3	10.2	30.2	
9.5	32.9	35.6	
7.5	38.6	21.4	K
9.2	49.2	38.6	
9.2	45 2.1	50.6	
9.5	14.4	29.3	
8.0	22.4	52.2	K
9.5	31 6	0.4	
9.3	54.5	46.9	
9.0	46 5.6	2.4	
9.5	14.3	28.2	
9.3	47 10.9	29.8	
9.3	16.4	54.3	
9.1	31.7	33.8	*b*
9.1	38.1	10.6	K
9.5	52.4	20.5	
9.5	48 15.5	46.9	
9.3	26.9	2.6	
9.5	49 3.9	6.4	
9.5	20.3	42.5	
8.3	29.1	58.6	K
6.0	55.0	24.7	K*b*
9.0	50 4.0	52.0	
9.3	21.7	41.9	
9.5	23.3	51.1	
8.5	33.4	15.3	K
10pr.	+ 29.20	+ 2.77	

4701—4760

m	21ˢ—22ˢ	+11°	
9.3	50 35.6	16.3	aK
9.0	51 12.2	59.2	
9.1	45.5	8.7	
8.7	54.3	29.5	
9.0	54.4	1.8	
9.5	52 23.4	5.5	
9.1	30.2	53.0	B
9.5	53 30.2	59.0	
9.0	31.9	37.5	
9.1	58.8	32.4	b
9.4	54 3.9	6.2	
9.5	6.4	55.6	
9.5	21.7	17.9	
9.5	30.4	7.2	
9.5	53.8	12.2	B
9.5	55 11.2	49.7	
9.5	12.4	39.3	
9.5	34.8	17.0	
9.2	56 14.4	15.4	b
9.5	18.3	58.7	
9.5	46.4	1.0	
9.3	57 34.3	50.3	
9.4	35.0	56.8	a
7.3	58 8.5	53.9	B
9.5	32.3	39.6	
8.5	43.8	51.0	K
8.9	59 28.0	16.0	
9.1	28.7	29.9	K
7.3	29.6	45.5	K
7.4	56.0	2.9	K
9.5	0 2.6	55.6	
9.5	43.0	4.5	
9.5	50.9	53.6	
8.5	1 16.3	9.5	K
8.9	22.3	47.6	K
8.7	26.7	28.6	K
9.5	37.1	32.4	K
var	48.9	49.7	K
9.4	2 17.4	56.6	
9.5	24.1	15.4	
9.5	42.7	44.7	K
9.5	3 9.2	49.5	
9.2	9.4	43.7	K
9.5	36.3	13.5	
9.5	52.4	28.0	
9.3	58.9	40.9	
9.1	4 0.9	19.7	
9.5	4.4	55.6	
9.2	55.5	58.4	
9.0	58.2	25.7	
8.6	5 2.2	2.3	K
9.4	15.4	17.8	
9.1	6 22.7	37.8	
9.5	29.4	38.5	
8.4	48.6	31.6	B
8.1	57.1	27.8	B
8.7	7 5.0	58.5	K
9.3	18.4	1.2	
9.5	20.6	15.8	
9.5	23.4	57.4	
10pr.	+ 29.36	+ 2.89	

4761—4820

m	22ˢ	+11°	
9.1	7 37.4	38.6	K
8.2	8 4.5	30.3	K
9.1	33.7	11.6	K
9.5	37.7	35.7	
7.4	53.7	2.4	K
8.7	54.1	4.5	K
9.5	9 29.5	3.6	
9.5	41.9	43.8	
9.5	10 35.5	8.4	
9.5	53.0	52.7	
8.7	56.0	41.8	K
9.5	11 8.3	32.0	
9.2	33.9	35.1	
9.5	12 3.3	50.1	
9.5	6.4	31.3	
8.0	17.7	44.2	K
9.5	20.9	16.0	
9.3	45.1	39.0	K
8.0	47.7	42.9	K
9.5	13 9.4	54.5	
9.2	26.4	8.3	b
9.1	30.9	23.9	K
9.5	14 18.0	36.3	
5.5	25.4	30.1	K
9.5	35.4	9.9	
9.3	45.7	7.6	
9.5	15 47.5	5.3	
8.9	57.8	14.9	K
9.5	16 20.4	5.6	
9.4	29.0	18.1	
9.2	17 13.9	11.2	K
9.4	17.8	45.9	K
9.5	39.2	16.3	
9.3	46.6	46.6	
9.5	53.1	55.6	
9.4	18 16.2	5.1	
9.1	19 34.5	15.8	K
9.5	53.4	16.0	
9.1	20 16.3	9.3	K
9.5	38.1	54.4	
9.4	41.9	5.7	
9.5	43.2	42.5	
9.5	52.5	40.1	
7.5	57.4	31.0	K
9.5	21 28.5	5.0	
9.5	32.9	14.9	
9.5	34.9	31.3	
9.5	37.1	45.2	
9.5	52.5	15.3	
9.5	22 2.0	55.4	
9.5	10.5	56.9	
9.5	34.6	42.8	
8.5	23 17.9	40.4	L
9.5	22.6	20.6	
8.8	28.2	16.7	
9.2	28.9	9.1	R
9.2	31.9	28.8	a
9.2	36.9	26.9	
9.4	57.8	55.6	B
9.5	24 17.7	39.6	
10pr.	+ 29.54	+ 3.01	

4821—4880

m	22ˢ	+11°	
9.3	24 26.7	6.7	B
9.5	42.1	16.7	
8.5	25 9.9	30.1	R
9.5	47.4	16.1	K
9.5	52.4	15.3	a
9.3	26 37.0	21.1	K
9.3	52.1	54.7	
9.4	54.4	18.8	Kb
9.3	27 33.6	56.7	
9.2	57.4	46.7	
8.6	58.6	9.7	Kb
9.3	28 14.4	31.8	
9.3	22.4	57.2	
9.3	32.1	43.8	K
9.3	58.2	9.0	K
9.1	29 7.8	50.8	K
9.4	12.5	11.4	K
6.8	55.9	49.9	K
9.5	30 3.9	18.2	
9.3	4.2	54.9	B
9.3	8.8	56.2	
9.3	31 14.5	55.9	
9.2	15.0	57.6	
9.5	23.4	43.1	
9.3	25.4	21.8	
9.4	38.7	22.5	
9.4	32 6.5	40.9	
9.5	10.8	33.4	
8.9	17.5	57.5	K
9.1	17.8	53.0	Kb
9.3	21.4	24.5	
9.1	35.4	13.5	K
9.5	33 25.0	55.3	
9.3	34 0.4	39.7	B
9.3	0.7	8.9	
9.5	3.9	58.4	
9.4	7.2	26.9	
9.5	14.3	8.7	
8.1	34.4	49.5	K
9.3	45.0	13.0	
9.4	53.1	56.9	
9.5	35 6.8	41.6	
9.1	10.1	36.4	
9.4	21.3	28.3	
9.3	36 8.5	1.6	b
*9.4	53.2	52.2	
9.5	37 31.7	49.3	
9.4	46.2	21.6	B
9.5	38 45.4	41.7	
9.5	43.7	17.8	B
9.5	57.3	32.2	
9.5	39 17.1	15.2	
9.3	26.7	3.4	B
8.9	29.1	56.5	
4.8	29.2	25.5	Kb
9.4	40 11.7	47.5	
9.3	16.9	45.6	
9.3	23.9	36.8	
9.5	29.4	0.3	
9.5	32.7	16.0	
10pr.	+ 29.71	+ 3.10	

4881—4940

m	22ˢ—23ˢ	+11°	
9.3	40 33.0	41.2	
9.5	33.7	57.4	
9.5	41 5.8	36.0	
9.5	9.6	55.4	
9.5	39.2	56.2	
9.3	47.9	2.6	Kb
8.9	42 4.9	50.6	K
9.5	43 2.1	12.5	
9.5	44 42.1	2.7	
9.5	49.0	34.6	b
9.5	53.8	25.1	
9.5	45 5.4	57.9	
9.5	47 5.0	10.7	
9.5	8.9	41.0	
9.4	19.5	54.2	
9.1	26.2	26.4	b
9.2	45.5	46.9	
9.4	58.8	28.0	
9.5	48 12.5	5.3	
9.4	16.8	27.9	
9.4	38.3	35.6	
9.5	50.5	8.1	
9.5	55.1	54.9	
6.9	49 36.8	4.0	L
9.3	38.2	38.8	
9.2	52.4	41.8	b
9.5	50 12.1	54.0	
9.5	35.0	9.9	B
9.5	51 13.0	43.8	
8.9	18.0	17.3	
8.8	20.0	15.7	
9.5	38.0	3.8	
8.5	52 1.6	25.6	
9.0	53 1.3	27.7	K
9.2	8.7	42.1	B
9.4	24.4	52.4	
9.2	42.7	4.3	
8.4	46.0	14.5	
9.5	54 6.8	38.5	
9.4	36.9	17.7	
9.0	58.0	45.1	K
9.5	55 0.5	14.2	
9.5	42.0	38.0	
9.5	44.5	44.2	
9.3	56 18.5	2.9	
8.2	29.7	5.7	K
9.2	49.5	12.4	
9.2	57 20.1	50.5	
9.5	24.0	23.5	
9.4	58 56.2	55.2	a
9.5	59 20.5	32.3	B
8.8	42.7	50.0	K
9.2	50.0	23.1	
9.4	50.5	49.0	
9.5	57.4	56.1	a
9.5	0 6.0	24.3	
9.3	10.5	52.4	
8.6	12.7	1.1	Kb
8.8	13.7	36.1	K
7.8	34.5	53.6	K
10pr.	+ 29.92	+ 3.20	

4941—5000

m	23ˢ	+11°	
9.4	0 54.0	45.3	
9.3	1 44.2	47.2	
9.1	48.5	50.7	K
9.5	50.0	29.5	
8.7	2 0.2	11.5	
9.4	3 7.0	44.9	
9.5	20.4	36.1	
9.5	4 36.8	4.1	
9.3	42.0	40.2	
9.5	45.9	55.8	
8.6	5 4.0	3.9	K
9.2	10.6	6.4	K
9.3	35.4	32.6	
9.4	36.2	29.3	
9.2	37.5	46.3	Bb
*9.4	47.2	5.3	
8.4	52.7	9.7	K
9.4	6 2.7	56.6	
9.4	50.5	7.7	
9.5	50.9	47.5	
9.5	52.2	41.7	
8.4	7 19.8	56.6	R
9.5	40.8	42.3	
9.4	48.9	5.5	
9.2	51.0	53.4	B
7.7	8 1.5	38.8	L
9.0	40.9	56.3	K
8.8	45.1	1.6	K
9.5	9 11.3	4.5	
9.5	17.2	7.7	B
8.9	20.0	53.5	Kb
9.5	23.2	26.8	
9.5	33.1	8.2	
9.5	49.5	50.7	
9.5	10 26.1	31.5	
9.3	11 5.5	51.4	
8.7	5.5	19.8	K
9.4	38.4	29.5	
9.5	58.8	32.2	
9.2	12 3.7	22.7	
9.4	11.0	43.1	a
9.5	23.5	4.2	
9.0	59.5	45.9	K
9.5	13 16.0	54.5	
8.9	14 5.5	38.1	K
9.5	27.0	47.9	
9.5	28.5	57.0	
9.5	31.3	3.6	
9.2	15 11.5	55.9	
9.3	14.5	42.0	
9.5	17.0	52.3	
9.2	21.5	23.9	K
5.3	47.5	31.3	L
9.0	54.0	38.5	R
9.4	16 16.4	1.4	
9.3	18.8	29.0	B
9.4	28.6	1.2	
9.3	38.4	32.6	K
9.4	17 12.0	28.5	
9.2	18 2.0	52.4	b
10pr.	+ 30.12	+ 3.26	

4865a

9.5	36	36.4	49.9	B

4955a

9.3	5	37.9	45.9	

5001—5020

m	23ʰ		+11°	
	′	″	′	
9.5	19	36.2	4.1	
9.5		48.5	39.9	B
9.5		59.2	13.5	
9.3	20	2.6	8.4	Kb
9.5		42.2	0.6	
9.5	21	5.0	49.0	
8.9		18.6	8.8	K
9.0		46.9	28.6	R
4.8		50.9	56.8	L
8.7	22	24.9	13.3	K
9.2		38.7	36.4	
9.3		41.9	53.7	aB
9.5		55.4	3.1	
9.5		56.7	5.5	
9.2	23	20.8	52.6	K
9.3		28.7	7.1	
9.3		35.1	5.1	
9.4	25	14.2	0.8	
9.2	26	27.8	10.5	
8.2	27	2.7	33.3	K
		+	+	
10 pr.		30.28	3.29	

5021—5040

m	23ʰ		+11°	
	′	″	′	
9.2	27	20.7	15.5	R
8.6		24.7	44.4	K
9.5		24.8	3.3	B
9.5		32.2	20.3	
8.8		38.3	53.3	K
7.7		51.5	52.3	K
9.3	28	12.8	10.1	
9.1		34.2	27.7	K
9.5		55.8	2.7	
9.5	29	22.7	18.2	
9.3		32.7	39.1	
9.5		57.7	29.7	
9.3	30	12.8	47.6	
9.2		40.5	0.2	
8.7		56.2	39.1	
9.5	31	14.0	3.2	
9.1		24.5	4.4	K
7.8		34.2	24.1	K
9.0	32	7.8	48.4	
9.4		17.7	14.5	
		+	+	
10 pr.		30.35	3.31	

5041—5059

m	23ʰ		+11°	
	′	″	′	
9.5	32	39.7	55.1	?
9.3	33	5.5	7.5	
9.5		6.7	18.2	
8.4	34	40.5	56.3	K
8.7	35	41.8	2.0	K
9.3	36	23.7	45.0	
9.3		33.7	26.3	R
9.5	37	15.0	15.2	
9.0		21.0	10.0	
9.5		47.5	58.6	
8.8	38	8.2	33.7	R
9.5		37.0	39.5	
9.5		40.8	8.1	
8.9	39	6.2	52.5	K
9.3		10.7	17.3	R
9.3		26.0	39.1	
9.2	40	52.7	47.8	K
9.5	41	5.7	8.2	
8.3		32.8	49.8	K
		+	+	
10 pr.		30.46	3.33	

5060—5078

m	23ʰ		+11°	
	′	″	′	
9.3	41	44.7	19.0	R
9.5		52.9	56.0	
9.5	42	29.2	36.4	
9.5		30.4	1.3	
9.4	43	2.1	54.0	
9.2		44.5	53.0	a
9.2	44	5.7	14.5	
9.0		57.3	56.6	K
7.3	45	37.7	6.8	K
9.0		40.5	53.0	K
8.8	46	13.2	58.7	K
9.0		25.4	49.4	
7.8		34.2	11.7	K
9.4		47.0	21.0	
8.7		49.6	50.9	
9.1	47	20.7	14.7	a
9.2		32.2	15.2	a
9.2		36.0	21.0	Bb
9.2	48	36.5	2.8	R
		+	+	
10 pr.		30.55	3.34	

5079—5097

m	23ʰ		+11°	
	′	″	′	
9.4	48	57.6	59.3	a
9.3	49	42.6	59.1	K
8.8		48.7	15.9	
9.5	50	26.5	9.7	
9.2	51	44.7	43.7	K
9.3	52	1.2	26.2	
7.6		59.7	27.6	R
9.2	53	38.1	45.3	
8.6	54	30.8	51.4	K
9.3		50.7	42.7	
9.5	55	8.1	9.7	
7.0	56	5.2	31.3	L
9.5		5.7	50.0	
7.0		35.7	20.0	Kb
9.3		51.7	16.2	
9.3	57	17.2	49.2	
9.3		22.7	58.3	
9.4	58	10.4	1.3	b
8.3		26.7	42.7	B
		+	+	
10 pr.		30.66	3.34	

Zone +12°

1—20

m	0ʰ		+12°	
	′	″	′	
9.4	0	7.6	17.7	B
9.3		14.4	16.6	K
9.5		34.8	35.0	
9.4	1	22.3	54.6	
8.8		43.4	48.2	
8.5	3	2.0	47.5	
9.5		11.9	6.3	
8.5		12.8	24.9	B
9.1		13.5	30.4	B
9.0		35.6	56.5	
9.2		51.4	14.4	Kb
9.5	5	5.4	29.5	
8.4	6	42.6	45.7	
8.3	8	5.5	37.2	K
9.3	9	42.8	20.7	
8.9	10	10.1	11.7	
9.2	11	14.6	7.5	
8.0		44.8	47.3	K
9.3	12	10.5	12.9	B
8.5		24.5	35.4	K
		+	+	
10 pr.		30.77	3.34	

21—40

m	0ʰ		+12°	
	′	″	′	
9.5	13	28.6	20.4	
9.1	14	20.5	41.3	a
9.4		34.3	15.3	B
9.5		48.5	17.4	
6.2		56.3	41.6	Kb
9.5	16	22.1	23.8	Rb
9.5	17	13.1	53.5	
9.5		20.5	22.7	
9.1		48.9	59.9	Bb
9.4		57.2	59.6	
9.5	18	39.5	17.9	
9.5		57.0	28.3	
9.5	19	10.3	13.8	
9.5		10.3	37.6	
9.5		51.6	44.4	
8.8	20	15.4	54.3	R
9.5	21	11.0	20.0	
9.2		14.7	0.8	b
9.2		36.1	45.1	K
9.0	22	1.5	41.3	K
		+	+	
10 pr.		30.96	3.33	

41—60

m	0ʰ		+12°	
	′	″	′	
9.5	22	5.3	0.5	
9.3		10.0	7.5	
9.5		10.1	14.8	
9.4		31.0	38.2	
9.2	23	9.8	51.6	K
9.5		46.2	55.0	
7.2	24	11.9	7.3	K
9.6		20.0	14.7	
9.0		51.3	43.7	K
9.5		55.2	51.3	
9.5	25	15.6	45.8	
9.4		34.8	38.8	R
9.5	26	2.0	27.5	
8.9		4.0	25.4	K
9.5		21.5	40.0	
9.0	27	15.6	17.5	Kb
6.0		23.6	35.1	K
9.5	28	19.8	42.1	
6.5		25.5	25.4	K
9.5		27.6	32.0	
		+	+	
10 pr.		31.05	3.32	

61—80

m	0ʰ		+12°	
	′	″	′	
9.4	28	34.9	7.1	B
9.5		40.3	17.5	
9.5		41.3	8.1	
8.3	29	1.5	28.9	K
9.4		11.4	10.7	B
8.9		21.1	40.0	K
9.5		56.0	59.0	
9.3	30	2.1	4.7	
9.5		44.9	55.9	
9.5	31	1.3	48.7	
9.5	33	5.0	54.9	
9.5		16.6	20.6	
9.0		27.1	43.4	
9.3		39.9	5.6	K
7.9	34	0.7	9.8	K
9.5		8.5	21.6	
9.5		9 3	44.7	
8.4		24.0	20.0	K
9.5		35.4	7.1	
8.8	35	6.2	50.9	K
		+	+	
10 pr.		31.14	3.31	

81—100

m	0ʰ		+12°	
	′	″	′	
9.3	35	13.3	1.2	
9.5	36	5.6	33.8	
8.2		40.5	31.0	K
9.0	37	12.3	11.4	
8.8	38	5.8	6.5	
9.1		21.6	59.4	b
7.5		57.0	21.3	L
9.5	39	33.5	14.8	
8.4	40	8.0	4.7	K
9.0		9.3	4.0	
9.5		19.9	25.5	
9.5		35.8	3.4	
9.5		39.8	56.2	
9.5	41	9.1	47.3	
8.3		24.2	5.1	K
9.0	42	10.0	42.7	
9.5	43	18.1	15.0	
9.4		22.0	24.7	
9.5		54.5	9.0	
9.5		55.6	49.8	
		+	+	
10 pr.		31.24	3.29	

101 — 160

m	0h—1h ′ ″	+12° ′	
9.5	44 25.1	40.3	
9.5	28.3	33.0	
9.0	45.0	19.5	
7.3	54.4	51.6	K
9.5	45 57.8	28.7	
9.5	59.0	5.8	
9.5	47 22.1	20.6	
8.2	26.5	3.9	K
8.9	32.0	45.4	Kb
9.2	48 18.1	8.5	
9.4	23.5	18.6	
8.9	27.5	49.4	K
9.3	34.5	22.0	B
9.5	49 13.6	15.4	
9.5	38.1	22.3	
9.5	38.6	15.0	
9.5	50 16.5	43.4	
9.5	18.3	17.8	
6.0	18.7	56.1	K
9.5	51 54.6	35.8	
9.2	55.8	17.9	
9.2	52 46.0	22.3	
9.1	47.5	39.2	b
9.5	49.6	15.4	
9.5	54 38.1	29.2	
7.8	55 30.0	16.1	K
9.5	56 21.5	20.9	
9.5	39.3	34.2	
9.5	57 2.1	39.7	
9.5	17.5	0.2	
8.7	36.3	3.5	
9.5	58.8	22.3	
9.1	58 11.8	32.7	
8.0	34.0	29.2	Lb
6.2	57.3	9.9	K
9.2	59 15.7	49.2	
9.4	20.3	32.7	
9.5	43.0	24.1	
9.5	0 8.2	54.0	a
9.0	33.1	54.9	K
8.5	1 34.0	34.4	
9.5	3 5.5	52.7	
9.4	25.6	0.8	B
9.5	4 11.1	25.1	
9.0	46.5	40.9	
9.0	48.6	16.0	
9.5	59.1	51.7	
9.5	5 27.0	35.5	
9.5	59.6	36.1	
9.4	7 11.5	20.9	B
9.5	11.5	25.9	
9.2	24.8	17.5	K
9.5	8 10.6	16.8	
9.5	24.5	12.6	
8.7	31.4	58.1	K
9.5	9 8.0	47.2	
9.5	18.1	46.2	
9.4	51.0	13.7	b
8.5	10 4.0	48.6	K
9.5	58.4	15.1	
	+	+	
10pr.	31.46	3.24	

161 — 220

m	1h ′ ″	+12° ′	
9.5	11 12.9	42.7	
9.5	30.5	27.5	
9.0	12 47.1	11.2	K
9.0	58.5	42.0	L
9.0	13 9.6	6.0	K
9.5	32.5	59.6	
9.5	14 30.5	22.3	
9.2	51.7	0.2	K
8.8	54.3	21.6	K
9.5	15 9.6	42.0	
* 9.3	25.5	56.3	
9.2	16 32.7	8.7	
9.4	47.3	43.7	
9.0	17 50.4	37.5	
9.0	52.5	6.0	
9.5	18 15.1	30.5	a
9.0	18.1	28.1	K
9.5	37.8	34.1	
9.5	19 38.5	35.1	
9.5	53.6	42.7	
9.0	20 23.2	1.9	K
9.5	21 42.2	24.4	
9.1	22 6.2	0.5	Kb
8 8	23 18.8	41.7	
9.2	24 12.2	56.8	R
8.7	14.4	19.7	
9.5	18.5	9.7	
9.5	25 2.3	41.6	
8.0	3.6	25.4	K
9.0	26 39.4	8.3	
9.3	27 12.9	0.7	
9.3	32.8	16.7	
9.5	28 42.5	24.9	
9.5	44.5	26.7	
9.5	46.0	38.5	b
9.5	29 9.4	50.7	
9.4	31.9	29.6	
9.5	38.7	22.8	
9.5	30 9.2	27.0	a
9.2	17.9	52.3	R
9.0	28.3	5.3	K
9.1	47.7	54.4	K
9.5	52.4	34.4	
9.5	31 32.7	20.5	
9.2	38.3	59.2	K
9.5	32 12.2	45.7	
9.5	43.8	20.3	
9.5	44.9	14.0	
9.5	45.0	16.8	
9.4	49.0	49.7	
8.9	33 22.6	30.4	K
9.4	25.4	25.6	Kb
9.3	52.2	40.6	
9.5	54.6	5.9	
8.8	34 42.8	59.9	K
9.2	35 26.5	10.6	K
9.5	29.0	2.4	R
8.5	31.4	12.5	K
9.2	32.6	14.2	K
8.8	53.5	8.2	K
	+	+	
10pr.	31.81	3.11	

221 — 280

m	1h ′ ″	+12° ′	
9.4	36 12.1	44.1	B
9.5	37.1	32.5	
8.8	38.7	5.7	K
9.3	37 1.3	58.0	
9.5	10.5	18.9	
8.8	44.9	10.1	K
9.5	47.0	46.6	
9.5	39 0.5	7.7	a
9.5	12.6	54.8	
9.1	13.8	48.9	b
8.7	45.0	14.9	K
8.3	52.0	27.8	K
9.1	40 5.8	0.2	
9.5	12.6	40.2	
9.5	51.0	52.3	
9.4	59.3	12.4	a
9.4	41 23.6	49.8	B
9.5	37.5	10.7	
9.5	52.8	7.7	
9.5	42 35.0	15.2	
9.3	43 10.9	3.9	
9.4	14.4	11.3	B
9.3	21.5	18.0	b
9.5	58.6	13.1	
9.5	44 4.2	33.6	
8.7	11.3	41.6	K
9.2	48.0	2.6	
9.4	45 45.7	57.0	
9.5	49.8	59.8	
9.5	47 11.7	12.5	
9.3	41.6	15.2	
9.4	48 22.5	28.5	
9.5	48.3	13.8	
8.3	49 1.9	53.7	R
9.5	17.5	4.7	
9.5	32.2	53.9	
9.3	32.5	40.1	
9.5	37.7	58.0	
9.4	47.8	5.8	
8.9	50 2.5	14.8	K
9.5	16.5	11.9	
9.5	51 23.7	51.4	
9.5	41.2	32.3	
8.5	53 1.3	40.5	Kb
9.5	19.6	58.0	
8.3	20.7	6.3	K
9.5	34.9	0.3	
9.3	50.7	9.4	
9.5	54 1.0	19.8	
9.5	32.5	21.1	
6.5	46.5	46.8	K
9.3	55 13.6	46.8	K
9.3	18.5	33.7	
9.5	56 3.7	5.0	
9.1	6.7	20.8	b
9.1	12.0	22.9	
9.4	21.5	36.5	
9.4	44.0	2.1	
9.5	57 51.8	48.1	
8.8	53.5	22.5	B
	+	+	
10pr.	32.06	2.98	

281 — 340

m	1h—2h ′ ″	+12° ′	
7.8	57 58.9	38.5	K
7.3	58 40.7	46.7	K
9.2	45.6	5.6	b
9.5	59 5.0	46.7	
9.4	9.4	8.9	
9.5	0 2.5	28.7	
9.5	1 6.5	41.2	
9.5	27.8	49.6	
9.1	39.8	50.5	b
9.5	45.5	12.2	
9.3	57.9	54.8	
7.5	58.9	29.1	L
9.5	2 36.5	46.7	
9.5	51.6	3.0	
9.5	3 2.0	15.6	
9.2	4 3.4	48.9	b
9.5	20.5	14.4	
9.5	40.1	13.3	
9.5	49.1	0.4	
9.5	50.5	20.6	
8.7	5 14.8	23.3	
9.5	44.5	45.4	
9.4	6 3.1	6.0	
9.5	29.6	16.1	
9.5	35.5	3.9	
9.5	7 5.5	23.3	
9.5	12.0	7.8	
8.9	14.2	1.9	
9.5	35.5	38.6	b
9.5	36.5	46.7	
9.5	8 19.5	33.1	
9.5	57.5	30.1	
9.5	10 8.0	15.7	
9.5	8.5	9.4	
6.8	15.7	46.8	K
9.5	58.0	49.0	
6.5	11 0.7	20.2	K
9.5	12 42.8	10.6	
9.2	46.5	7.3	b
9.3	14 20.8	57.7	
9.0	21.2	31.9	K
9.3	23.0	35.3	
9.2	52.2	58.8	
9.5	15 56.5	32.0	
8.8	16 40.5	21.9	K
8.6	17 4.2	58.2	K
8.5	17.0	44.4	K
9.0	24.5	40.2	K
9.5	36.9	1.4	B
9.3	18 16.5	55.0	
8.8	26.1	52.5	
7.8	36.5	14.6	K
9.3	41.5	17.0	
9.5	19 13.0	27.2	
8.0	59.3	18.3	B
9.4	59.5	46.8	
* 9.0	20 8.1	25.1	
8.2	42.5	5.9	K
9.5	52.2	27.2	
9.5	21 54.5	33.6	
	+	+	
10pr.	32.28	2.83	

341 — 400

m	2h ′ ″	+12° ′	
9.5	22 53.5	28.3	
8.3	54.2	46.7	K
9.5	23 26.5	9.9	
9.3	42.1	50.8	
9.4	24 19.5	25.0	
7.6	20.3	2.0	Kb
9.0	32.0	48.8	
9.3	39.5	16.2	
9.2	48.6	52.0	
8.9	25 22.2	57.1	Kb
9.2	29.4	12.5	K
9.4	59.3	36.1	
9.5	26 17.5	37.9	
7.8	27 28.8	30.8	K
9.4	57.5	42.0	
9.3	28 7.5	22.6	
9.0	19.0	17.9	
9.5	49.5	25.1	
8.5	29 12.5	15.7	K
9.5	43.5	15.3	
9.5	30 5.0	28.0	
9.5	6.5	42.5	
9.3	23.5	27.7	
9.5	31 8.3	51.5	
9.5	34.0	4.4	
9.1	40.5	12.5	K
9.2	51.0	46.2	
8.8	32 23.0	16.6	K
9.2	28.5	7.3	
7.7	32.9	53.8	K
9.5	38.0	27.4	
9.2	46.2	8.4	nK
9.5	48.0	9.8	
9.4	33 5.6	42.8	B
9.4	51.5	52.5	
9.0	34 17.5	22.6	
8.3	25.3	12.1	K
8.5	43.2	7.2	K
9.5	58.5	38.6	Kb
9.3	35 36.6	55.4	
7.5	50.5	40.4	K
9.1	51.2	20.8	
9.4	36 28.5	27.0	
9.5	43.5	9.2	
9.5	37 9.8	11.9	
8.0	13.5	35.0	K
9.4	38 11.5	14.0	
9.1	40 29.0	19.8	K
8.8	51.5	26.4	K
9.4	41 22.5	19.2	
9.5	59.0	33.7	
7.6	59.8	3.6	
9.4	42 13.5	40.6	
9.4	16.5	39.8	
8.2	31.3	50.7	K
9.0	43 25.5	30.3	
8.8	33.0	53.5	K
9.5	42.0	50.2	
9.4	44 32.0	16.6	
9.5	46.5	26.6	
	+	+	
10pr.	32.56	2.63	

170a				
var	15	18	6.4	

336a				
9.8	19	59.8	3.5	B

m	401—460 2ˢ—3ˢ	+12°		m	461—520 3ˢ	+12°		m	521—580 3ˢ—4ˢ	+12°		m	581—640 4ˢ	+12°		m	641—700 4ˢ	+12°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′ ″	′	
9.5	45 2.0	47.8		9.3	10 47.9	11.4		9.5	44 13.5	24.6		9.4	13 51.9	17.3		8.7	36 14.3	53.2	Kb
9.0	2.5	21.6	K	9.5	11 7.0	12.7		9.0	45 35.9	16.9		9.2	56.5	9.0	K	9.5	37 23.5	11.5	
9.5	34.5	7.0		9.2	16.4	12.7		8.9	46 55.8	28.3	K	9.5	14 55.8	41.3		9.5	43.2	45.8	
8.3	46 20.0	46.2		9.0	18.0	19.5		9.2	58.6	3.3	b	7.4	16 0.2	38.1	L	9.5	47.0	8.8	B
9.0	22.0	32.2	K	9.4	25.7	15.7		9.5	47 11.4	57.5		8.2	34.7	34.3	K	9.4	38 10.3	28.7	b
7.8	42.8	20.3	K	8.8	30.4	6.2	K	9.0	14.4	50.2		9.4	50.0	36.2		9.5	57.2	8.7	B
9.1	59.5	8.6	K	7.3	53.0	51.0	K	9.0	31.1	43.9		9.5	52.8	22.9	B	9.4	58.0	24.4	
8.7	47 2.6	56.0		9.5	12 4.1	41.7	B	9.1	48 22.8	44.3		9.5	17 5.9	16.1		9.3	39 23.0	45.7	
9.3	11.3	53.1		9.5	5.9	11.0		8.9	45.4	55.5		9.5	29.3	28.3		8.6	30.2	51.8	K
8.5	41.5	35.1	K	9.5	15.8	35.5		9.5	53.5	2.6		9.5	30.1	39.1		9.5	31.8	0.6	
8.3	48 14.3	24.0	K	9.5	43.9	55.9		8.5	49 14.8	50.6	K	9.3	18 1.4	11.8	K	9.2	46.2	43.9	
8.8	17.0	16.4		9.5	16 3.4	32.7	b	9.0	22.0	32.3	B	9.5	7.7	13.0	R	9.5	49.5	20.9	
9.4	18.0	13.1		6.0	11.9	7.6	K	9.4	41.8	28.3		9.5	11.9	24.8		8.0	40 26.3	40.4	K
9.5	49 10.5	43.3		9.2	19 4.4	37.9		9.2	53.4	24.8		9.2	19 13.0	30.0	Rb	9.5	33.4	37.7	
9.5	50 31.0	13.0		9.0	9.3	54.4		8.3	50 4.0	20.3	K	9.5	13.2	53.5		9.4	45.0	25.6	
9.2	33.2	7.9	b	9.2	13.9	24.1		8.6	31.8	40.8	Kb	9.5	22.8	48.6		9.5	41 1.8	51.0	
9.5	41.5	27.2		7.0	18.9	14.4	K	9.0	51 43.7	38.0		8.7	20 21.3	3.8	K	9.5	2.1	6.0	
9.5	55.0	21.2		9.0	20 20.8	13.0		9.4	59.8	46.7	R	5.0	44.2	43.4	K	9.5	8.7	48.1	
8.9	51 4.5	26.7	K	9.2	37.9	41.0	b	var	52 40.4	4.9	K	9.5	21 27.8	14.8		9.3	47.5	35.6	
9.2	32.1	11.2		9.4	40.3	37.8		9.5	53 36.9	51.1		9.3	50.3	50.8		9.4	57.4	15.0	
9.5	52 10.0	28.4		9.5	51.5	2.5		9.1	54 7.8	24.3	B	9.5	22 28.2	13.0	B	9.4	58.7	19.5	
8.3	50.2	24.7	K	9.5	21 47.4	55.0		9.0	20.4	35.6		9.5	23 11.7	4.6		9.5	42 10.0	35.6	
9.0	53 30.0	24.4	K	9.2	22 11.3	30.8		9.0	58.9	50.2		9.5	22.5	52.6	B	9.4	52.6	55.3	
9.5	38.3	4.7		9.3	14.9	7.8		9.3	55 1.4	31.0		8.9	25.2	38.5		9.5	43 2.9	56.2	
9.0	56.5	28.5	K	8.5	15.8	23.8		9.4	16.1	50.2		9.5	24 46.3	26.3		9.3	27.0	33.8	K
8.8	59.0	40.2		4.0	52.7	27.6	L	9.0	28.7	30.0	K	8.8	51.7	14.8	K	9.5	44 13.0	45.3	a
9.2	54 28.6	52.0	K	9.5	57.0	2.9		7.7	56 16.6	6.0	K	9.5	25 3.2	31.5		7.2	36.9	8.7	K
9.2	42.6	1.5		9.4	23 16.9	57.1		7.7	57 5.8	54.4	K	7.0	38.3	56.4	K	9.5	45 29.8	59.2	
9.5	43.5	30.5		9.5	44.8	59.5		9.5	11.1	0.5		9.4	26 13.5	16.6	Kb	9.5	30.3	53.4	
9.5	55 24.5	14.4		9.3	24 53.8	29.6	b	9.1	16.1	44.0	K	9.2	20.7	27.0	K	9.4	31.9	39.1	b
9.5	31.5	57.1		9.0	25 22.4	12.6		9.1	19.4	59.5		9.4	27 31.2	23.6	B	9.5	46 20.8	57.1	
9.4	39.5	22.3		9.5	27 9.8	13.7		9.4	49.1	2.4		9.5	32.7	55.4	B	8.0	21.0	12.9	K
9.5	57 1.5	35.1		8.7	28 43.1	48.9	K	8.9	58 36.8	46.0		9.5	28 18.6	48.8		7.5	37.2	7.4	K
8.5	1.5	5.1	K	9.5	29 1.3	11.7		9.4	46.1	43.9		9.5	36.2	51.9		9.5	48.3	25.7	B
9.5	18.9	59.2	a	9.3	31 7.2	3.0		9.2	0 42.9	37.8	Kb	9.3	46.3	24.9		9.3	47 4.7	29.3	
5.2	58 26.4	37.8	K	9.5	7.7	6.2		9.3	2 27.0	20.9		9.5	29 19.0	12.3		9.5	11.9	2.7	
9.2	43.2	54.9		9.0	15.7	48.7	K	9.3	51.2	26.0	aB	9.4	51.3	54.9		9.5	16.6	48.2	
9.5	51.4	31.0		9.0	27.0	20.2		9.3	56.6	16.0	K	4.0	30 4.4	13.1	K	9.3	47.4	17.2	
9.0	59 46.3	46.2		9.2	38.1	10.2		9.2	3 25.7	14.8	K	8.8	59.2	13.1		9.4	51.3	0.9	
9.4	52.5	35.9	B	9.5	32 6.8	44.2	R	9.3	32.2	12.3	K	6.8	31 2.9	43.0	K	9.3	56.5	41.2	b
8.0	0 13.9	36.6	K	8.8	28.8	36.7	K	9.3	41.5	55.9		9.3	9.7	58.1	B	9.4	48 59.4	30.3	
9.4	21.7	51.5		9.5	55.8	41.2		9.2	4 0.9	24.2	K	8.9	26.0	50.8	K	9.1	49 11.2	2.2	Kb
8.8	23.2	59.8	K	8.0	33 28.0	8.8	K	*8.7	35.8	5.4	K	9.3	41.2	26.7		9.5	23.0	21.3	
9.0	23.8	44.9	K	8.3	35 1.1	35.2	Kb	6.0	5 47.2	24.2	K	9.5	32 26.6	54.6		9.5	54.2	49.2	
6.8	1 3.9	18.5	K	8.8	15.1	20.0		9.3	6 20.6	32.6		9.5	40.0	36.8		8.8	50 17.5	33.2	
9.4	45.2	34.9	B	9.1	37 32.4	47.3	b	8.4	24.0	5.0	K	9.3	46.6	19.8		8.8	46.6	46.4	K
9.5	46.8	41.1	B	9.5	38 57.8	29.7		9.3	7 50 8	48.5		9.3	50.0	18.3	aB	8.8	50.9	44.0	K
9.3	2 9.5	52.3		8.7	39 25.3	4.2	K	9.1	8 40.3	35.7	K	9.0	33 2.6	18.1	B	8.7	51.7	11.5	K
9.5	31.5	6.2	?	9.5	40 46.7	17.8		9.5	9 14.0	56.0		9.5	12.3	26.8		9.1	59.1	42.0	K
8.5	59.2	58.4	K	9.3	41 16.0	36.6		9.4	25.7	58.0	B	9.5	17.0	50.0		9.5	51 1.0	53.5	
9.0	3 1.0	3.9	K	9.0	26.1	27.5	K	9.4	27.8	19.0		8.2	34 32.4	2.8	K	9.1	5.2	49.2	B
*6.3	23.0	29.9	K	9.1	37.1	37.0	b	8.9	10 20.2	13.0	K	9.5	35 2.6	34.4	B	9.3	8.4	28.4	B
8.3	6 29.3	33.1	K	9.0	43.8	9.5	K	8.5	28.1	12.3	K	9.2	16.0	9.4	K	9.3	9.3	48.9	B
9.4	29.4	13.8	B	9.5	59.8	10.6		9.3	40.4	27.0		9.5	16.5	37.1		9.5	9.6	18.7	
9.0	34.1	6.9	B	9.5	42 31.1	30.3		8.8	46.8	33.7	K	8.8	18.9	46.2		8.4	23.5	36.2	K
9.2	48.0	43.5		7.0	43 13.7	36.5	L	9.3	11 29.7	14.9		8.8	24.2	3.8	K	9.0	52 6.0	11.8	
8.9	56.0	36.5		9.4	41.0	30.4	B	8.0	41.8	45.1	K	9.3	45.3	25.3		8.3	21.5	21.6	K
9.0	7 15.1	8.4		9.5	56.8	0.7		9.1	12 21.4	2.1	Kb	8.0	56.7	43.3	K	9.2	33.7	6.2	
9.5	8 36.9	14.4		9.5	44 7.3	29.6	B	9.5	34.3	25.0		9.5	58.0	7.5		8.3	35.4	24.8	K
7.0	10 17.3	17.6	K	9.3	10.1	42.5		9.5	48.5	46.3		9.5	36 5.2	49.4		9.5	36.1	29.3	B
10pr.		*32.77*	*2.41*	*10pr.*		*33.03*	*2.09*	*10pr.*		*33.27*	*1.71*	*10pr.*		*33.44*	*1.32*	*10pr.*		*33.53*	*1.06*
		+	+			+	+			+	+			+	+			+	+

452ª			
9.5	3	39.0	5.5

563ª			
9.5	4	52.6	59.2

701—760					761—820					821—880					881—940					941—1000				
	4ᵘ—5ᵘ		+12°			5ᵘ		+12°			5ᵘ		+12°			5ᵘ		+12°			5ᵘ		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	52	38.0	49.2		8.5	9	4.0	53.9		9.5	27	2.6	52.8		9.2	36	30.4	58.8		8.5	45	58.9	2.0	
9.5		51.5	4.9		9.5		4.2	56.1		9.5		2.7	29.5		8.1		33.2	20.7	L	8.3	46	0.7	31.4	K
8.5	53	8.8	52.2	K	9.4		26.9	48.0		9.5		21.8	16.7		9.5		43.6	15.3		9.2		0.8	17.5	B
8.4		31.4	6.5	K	9.4		39.9	22.8		8.7		27.3	44.6		7.0		52.1	49.2	K	9.3		26.3	59.0	
9.5		34.6	6.0		9.5		55.1	20.1		9.5		30.6	50.8		9.0	37	0.8	5.7	K	9.4	47	0.9	39.6	
9.3		49.3	41.5		9.4	10	15.8	2.0		9.3		35.1	13.7		9.5		3.3	16.3		8.2		6.5	51.9	K
9.4	54	0.6	53.3	K	8.7		18.7	36.1	K	9.5		39.4	19.0		9.1		3.5	10.0		9.3		6.9	5.3	
9.3		9.0	28.1		9.5		19.7	41.8		9.5		49.0	16.9		9.5		7.9	52.8		9.5		10.2	21.6	
9.0		27.3	51.3	K	9.3		39.1	58.0		8.0	28	2.0	20.6	*B*	8.0		13.2	43.3	*Kb*	9.5		21.0	56.4	*a*
9.5		28.1	59.8		9.5	11	3.1	26.4		8.2		27.8	0.0	K	9.3		32.3	23.6		8.0		28.0	58.5	K
9.5		41.7	4.2		9.2		15.8	47.2		9.3		33.2	42.0		9.5		50.5	9.5		8.5		49.8	56.3	K
9.3		44.0	14.0		9.4		19.4	40.1		9.5		47.9	13.6		9.0		53.9	3.0	K	9.2		50.3	30.4	
9.4		53.7	42.9		9.5		24.3	32.3		8.5		52.2	23.3		8.5	38	0.4	4.8	K	9.2		57.0	56.4	K
8.5	55	18.6	27.4	K	9.5		25.9	48.4		9.0	29	4.3	41.1		8.2		17.4	27.5	L	9.2	48	19.9	13.0	
9.5		33.8	59.4		9.2	12	3.8	34.5		9.5		11.1	22.4		9.3		19.1	54.3	*R*	9.2		26.6	18.0	
9.5		34.3	29.1		9.5		14.0	11.9		9.1		15.3	10.4		7.5	39	5.1	17.4	L	9.0		47.5	20.2	
9.5		52.4	44.0		9.3		43.7	35.5	*B*	9.4		31.6	30.8		8.5		15.8	35.3		9.0	49	8.2	9.3	
9.5	56	31.0	7.2		9.5		56.8	32.0		9.4		38.6	25.6		9.4		18.6	12.4	*B*	8.7		14.3	30.3	
8.6		31.0	29.6	*Kb*	8.3		59.1	17.0		9.3		53.2	3.5		8.7		20.9	12.0	B	9.0		26.3	52.5	K
8.8	57	5.0	40.9		8.1	13	32.5	31.3	L	9.4	30	3.4	48.6		9.5		40.8	57.8		9.5		29.1	24.2	
8.0		7.3	34.8	K	9.4		40.3	58.7		9.0		6.0	45.0		8.7		51.6	0.8	K	8.9		43.6	39.0	
9.3		9.3	16.8		9.5		43.8	43.9		9.3		8.3	44.5		7.5		54.6	22.4	L	9.5		55.4	6.4	
8.3		12.2	47.5	K	8.5	14	0.1	1.1	K	8.8		23.6	35.1	K	9.3	40	2.6	54.4		8.5		55.7	51.9	K
9.2		41.4	30.8	K	9.5		27.0	39.8		9.3		27.3	25.3	B	9.2		4.5	34.3	*a*	9.2	50	11.7	25.3	
9.3		55.0	14.8		9.3	15	3.9	34.4		9.5		32.1	32.3		9.3		8.5	55.7		8.7		12.5	57.7	K
9.5	58	12.6	56.7		9.5		24.2	30.1		9.3		32.7	23.3		9.5		15.1	14.2		9.5		19.6	49.9	
8.5		27.2	31.0	K	9.5		34.6	43.2		9.5		33.0	45.4		8.7		22.8	32.3		9.5		28.9	17.6	
9.5		39.2	55.1		8.6		35.8	37.6		8.7		45.1	52.1		9.1		49.7	3.5		6.5		44.2	47.4	K
9.5	59	9.6	44.9		9.5	16	5.8	57.3		9.4		51.4	56.4		8.5		54.8	26.5		9.5		53.0	40.0	
9.5		13.5	16.4		9.2	17	10.8	22.0	*b*	8.8		53.4	13.0	K	8.3	41	4.3	6.0	K	9.3	51	4.0	11.7	
9.5		22.1	12.8		9.3		49.8	40.7		9.5	31	24.1	45.6		8.6		16.8	51.8	K	9.0		4.7	53.1	K
7.5		33.0	21.3	*Kb*	9.5	18	33.0	1.6		7.5		45.9	56.5	K	5.1		24.3	36.2	*Pb*	9.3		11.9	37.9	
9.4	0	31.0	34.4		9.0		36.4	43.2	K	9.5		58.0	6.4		9.0		25.6	8.8	K	9.3		17.4	38.7	
9.3		36.2	5.2		8.6	19	10.8	42.2	K	9.5	32	6.3	55.3		9.0		27.7	0.6	B	9.2		18.5	4.5	
9.3		37.1	23.7		9.4		31.7	55.7		9.5		16.8	33.6		9.4		47.9	52.9		8.1		20.0	27.7	K
9.0		52.0	47.6		9.5		44.1	19.4		9.5		16.8	36.7		8.8		50.0	13.7		9.4		32.0	42.6	
9.0		53.0	45.6		8.0		50.4	46.6	K	9.0	33	1.1	32.7		9.5	42	2.5	27.3		9.4		36.5	54.6	
9.0	1	11.7	17.1		9.5		59.2	58.5		8.8		12.2	24.0		9.0		28.8	28.5		9.5	52	2.8	58.8	
9.5	2	1.0	41.8		8.6	20	9.0	7.4	K	9.3		15.0	7.4		8.9		41.0	3.6	*Kb*	9.0		5.0	8.0	K
8.5	3	0.3	11.6	K	9.5		25.1	53.4		9.4		22.7	39.4		9.5		54.9	56.2		7.5		8.9	36.6	K
9.4		11.7	1.4	B	6.9		43.1	26.2	K	9.3		25.2	30.0		9.1	43	4.0	33.0		9.4		15.6	2.0	
9.4		22.2	37.0	*b*	9.5	21	16.7	55.9		9.0		27.8	24.7	K	9.4		25.2	50.5	B	9.5		19.0	43.5	
9.4		25.1	30.9		7.0		41.0	9.0	K	9.2		37.8	26.1	K	9.2		28.4	36.3		9.5		38.8	31.6	
9.1		36.9	9.4		9.5		45.1	42.5		9.5		38.0	40.5		9.3		32.8	53.7		8.7		47.1	55.3	K
9.0		51.4	0.7	K	9.5	22	26.6	4.0		9.2		38.4	16.2		8.4	44	5.8	50.2		8.7		56.6	10.0	K
9.2	4	17.2	2.3		9.5		28.9	18.5		9.5		43.7	44.5		8.9		12.4	32.4	K	8.6	53	0.4	40.5	
9.5		31.7	7.8		9.5		37.0	43.9		9.3		47.3	40.2		8.5		17.5	17.2	K	9.5		6.3	14.7	
9.5	5	26.3	43.5	B	8.7		42.1	14.4		9.2		58.5	19.4		8.9		26.3	30.4	K	9.3		33.2	25.7	
9.5		29.3	47.1		8.9		59.5	3.5		8.7	34	12.4	54.0	K	9.4		45.9	53.0		9.3		42.4	5.6	
8.9		42.8	2.2	K	8.5	23	14.3	26.6		9.2		27.4	14.2		9.3	45	0.2	27.4		9.5	54	3.3	26.3	
9.0	6	36.9	14.0	K	9.5		36.4	51.8		9.3		57.6	10.5		9.5		2.5	32.1		9.5		5.0	38.8	
7.8		39.3	21.8	K	9.1		46.0	7.5		9.5	35	3.0	57.2		8.9		11.1	52.2	K	9.0		5.3	9.6	
9.5		43.0	15.8		9.1		47.3	56.4	K	9.5		12.4	20.6		9.4		15.4	28.4		8.2		12.4	57.8	B
8.7		49.5	50.9	K	9.1	24	33.0	19.3	*b*	9.5		21.2	9.6		9.3		17.4	41.3		8.2		29.6	40.4	L
8.9	7	32.3	43.1	*Kb*	8.9		44.5	55.7		8.1		25.9	55.7	K	9.1		25.3	42.3		9.1		42.4	13.4	*b*
8.9	8	8.0	2.3	K	9.3	25	5.0	42.0		9.5		26.0	24.8	*b*	9.5		28.0	56.1		9.2		43.6	1.3	
9.5		16.7	32.5		9.5		26.5	31.7		9.1		27.6	4.4		7.5		51.3	23.7	K	9.5		48.0	30.6	
8.2		45.2	14.4	*B*	9.1		36.5	31.2	*b*	9.1		31.1	29.3		9.5		52.9	40.8		9.5		51.7	26.2	
9.5		47.1	30.2		9.5		50.1	5.0		9.3		42.3	56.6		9.0		55.7	28.7	B	8.9		54.2	36.2	
7.1		57.9	24.6	K	9.3	26	2.7	21.0		8.5		56.2	38.6		9.2		58.2	37.4		8.0	55	6.5	37.3	L
		+	+				+	+				+	+				+	+				+	+	
10pr.		*33.58*	*0.88*		*10pr.*		*33.63*	*0.61*		*10pr.*		*33.66*	*0.42*		*10pr.*		*33.67*	*0.27*		*10pr.*		*33.68*	*0.13*	

1001—1060

	5h—6h		+12°	
m	′	″	′	
9.5	55	22.8	55.7	
9.5		38.3	8.2	
9.3		47.4	1.5	
9.2		57.8	13.1	
9.0	56	0.0	32.1	
9.0		5.2	45.8	
9.1		8.1	58.6	
8.8	57	10.6	38.8	
9.0		14.0	27.4	
9.4		22.6	51.1	
9.5		24.5	26.2	
8.5		30.0	43.3	
8.2		53.4	29.3	K
9.0		56.4	54.5	
9.5	58	9.0	14.5	
9.2		13.0	52.3	
9.1		14.2	59.2	
9.0		15.8	20.1	
9.3		21.3	54.5	
9.2		31.8	49.8	
9.5		38.6	13.1	
8.5		42.6	1.6	L
9.0	59	0.7	24.9	K
9.5		1.4	45.6	
9.0		17.6	28.1	K
9.0		37.6	10.2	
9.4		43.8	24.4	
8.5		46.0	40.1	K
9.5		55.5	36.1	
9.3	0	7.3	45.9	
9.2		24.9	35.7	
8.9		35.0	17.2	
9.2		35.1	30.9	
9.5		41.5	43.5	
9.0		46.6	28.9	
8.5	1	5.2	59.4	K
9.5		20.1	9.5	
9.0		32.3	7.3	
9.3		41.5	49.1	
9.3		48.0	2.0	
9.4		49.5	1.0	
9.2		51.7	54.5	
8.9	2	1.6	24.4	K
9.5		8.5	28.0	
9.5		24.5	12.3	
9.1		30.7	6.0	K
9.3		41.4	14.2	
9.3		52.6	45.0	
8.0		53.1	1.6	K
9.3		58.8	11.0	a
9.0		59.7	23.3	
9.5	3	15.0	46.8	
9.4		31.6	1.1	
9.5		32.9	11.8	
8.8		42.8	30.0	
9.3		44.7	1.8	
9.5		48.3	11.0	
9.5		56.5	7.5	
9.1	4	8.7	36.1	
8.9		8.9	0.4	
10pr.		+ 33.68	— 0.00	

1061—1120

	6h		+12°	
m	′	″	′	
9.3	4	58.5	11.9	
8.9	5	7.7	8.2	
9.4		11.6	33.9	
9.5		25.5	1.3	
9.5		36.1	45.6	
neb		38.0	50.6	
9.5		42.2	34.0	
9.3		42.4	12.3	
9.0		52.9	18.5	
9.5		55.5	1.3	
9.4		56.0	59.1	
9.2	6	5.3	18.4	a
9.4		10.3	31.8	a
8.6		27.6	31.7	
8.7		40.5	20.7	
9.3		49.3	8.1	a
8.6	7	20.0	22.2	
8.7		23.5	7.6	K
9.4		25.7	49.6	
9.4		33.5	8.5	
6.0		36.4	35.5	Pb
9.4	8	9.4	39.2	
9.4		15.9	26.8	
6.1		18.6	18.4	Kb
9.2		27.2	32.1	
9.2		31.9	18.7	
9.0		35.0	54.3	
9.1		40 4	7.6	K
9.2	9	0.3	1.7	K
9.4		9.5	33.7	
8.7		14.1	56.0	K
9.5		24.5	1.3	
9.2		35.3	59.6	
9.2		45.6	22.0	b
9.5		55.7	27.2	
*9.5	10	8.5	24.0	
9.0		29.2	10.4	
9.5		30.1	43.3	
9.0		30.8	12.5	
9.2		31.0	35.3	
9.1		33.8	58.9	
9.4		45.2	57.6	B
8.3		50.0	45.6	B
9.5		50.5	56.9	
7.9		57.4	48.3	B
8.4	11	4.6	56.3	
9.2		24.1	58.5	
8.8		25.9	31.5	
9.5		29.3	57.0	
8.0		33 0	21.0	P
9.1		42.1	58.5	
9.4		43.7	22.0	
9.0		54.6	52.6	
9.5		56.3	2.2	
9.0	12	12.0	2.1	K
9.5		48.4	34.3	
9.0	13	12.4	26.7	
9.3		15.9	32.7	
8.0		35.3	55.8	K
9.0		39.5	1.0	
10pr.		+ 33.68	— 0.14	

1096a

9.5	10	16.6	54.5	B

1121—1180

	6h		+12°	
m	′	″	′	
9.3	13	41.2	20.6	
8.6	14	5.5	6.1	
6.8		28.6	38.3	K
8.5		44.4	26.9	K
9.5		53.9	42.6	
8.9	15	0.0	18.9	K
9.5		1.0	24.5	
9.4		1.5	0.8	
9.5		3.4	10.9	
9.5		22.8	54.9	
9.4		37.2	2.2	
9.5		58.7	3.5	
8.9	16	5.8	50.8	
9.5		12.0	31.0	
9.3		17.2	40.7	
9.5		19.2	41.2	
8.8		21.5	21.5	
9.3		27.0	12.4	
8.2		28.0	56.1	B
9.0		47.5	7.1	B
9.5		48.2	45.4	
9.3	17	13.9	32.4	B
9.0		21.0	18.9	
9.0		33.8	27.3	
9.4		39.1	42.3	B
9.2		43.6	25.2	
9.5		53.4	54.5	
8.7		59.7	16.4	
9.5	18	1.6	5.7	
9.2		2.8	46.0	
9.0		11.7	28.5	
9.0		39.6	0.1	
9.3		48.1	2.4	
9.0		54.8	48.1	
9.3		56.7	5.7	
9.4	19	2.8	36.5	
9.4		4.0	45.5	
9.5		19.6	59.1	
9.4		22.8	44.9	
9.4		33.0	51.2	
9.2		45.5	15.0	
9.5		52.9	23.3	
9.2		54.3	51.0	
9.3		57.2	53.7	
9.5	20	15.1	55.6	
9.2		38.2	27.5	
9.3		39.7	26.5	
9.5		40.8	15.9	
9.2		46.1	10.5	
9.3		47.7	36.4	
9.1		56.5	14.6	b
9.4	21	8.3	0.3	
8.5		10.5	38.4	K
9.5		43.4	55.3	B
9.2		43.6	15.7	
9.5		49.7	58.3	
9.4	22	45.1	34.5	B
9.3		48.9	6.6	
9.5	23	15.0	33.9	
9.5		21.9	46.0	
10pr.		+ 33.67	— 0.26	

1181—1240

	6h		+12°	
m	′	″	′	
9.4	23	31.1	52.5	
9.2		32.0	58.7	
9.4	24	7.8	22.3	
9.0		10.9	17.4	
9.0		25.0	50.9	
9.1		32.3	56.2	
9.1		35 4	56.9	
9.4		40.2	18.0	
9.4		55.3	34.3	
9.0		56.6	27.9	
9.5	25	11.9	26.1	
9.5		12.7	4.4	B
9.5		16.2	0.6	
9.3		47.9	49.5	a
9.2	26	12.6	29.0	
9.3		13.5	39.6	
9.0		15.6	50.7	
8.3		21.3	57.2	K
8.9		25.0	59.0	
9.4		27.1	12.8	
8.9		36.1	7.5	
9.5		37.2	12.9	
9.5		42.0	19.0	
8.5		49.8	39.1	L
7.9		59.0	46.8	K
9.4	27	4.1	20.7	B
9.4		7.2	42.8	a
8.8		35.3	16.6	
9.4		41.3	12.9	
9.4		47.1	3.8	
*9.3		54.5	32.9	
*9.4	28	16.3	29.2	
9.5		32.7	52.1	
9.5		34.0	19.0	
9.5		42.3	17.8	
9.3		48.1	11.7	
9.3		57.8	43.7	
9.5		59.0	55.0	
7.9	29	27.7	18.6	K
9.4		28.5	43.3	
9.0		29.8	17.1	K
8.5		30.2	15.6	K
9.0		37.7	53.1	K
9.3		43.3	53.5	a
9.0		45.5	51.5	K
9.5		48.2	1.5	
9.3	30	15.4	27.0	
9.3		18.3	13.4	
9.4		19.7	8.6	
8.2		24.5	51.8	K
9.0		55.2	36.7	
9.3	31	14.4	20.3	
9.1		15.9	13.5	b
9.0		20.0	40.4	
8.5		28.5	59.4	K
9.3		33.4	39.2	
8.6		57.0	30.4	
9.5	32	5.8	16.4	
8.5		9 1	10.8	K
9.0		17.0	50.9	
10pr.		+ 33.66	— 0.41	

1211a

9.5	28	5.0	50.2	B

1241—1300

	6h		+12°	
m	′	″	′	
9.5	32	50.1	33.4	
9.4		56.6	11.2	
9.1	33	18.2	10.4	
9.5		18.9	22.5	
9.2		19.3	56.3	
9.1		37.5	29.5	
8.7		50.8	41.8	
8.5	34	9.1	8.8	K
9.5		16.4	59.5	
9.3		20.2	6.4	
9.5		25.4	45.6	
9.5		55.2	18.0	
8.7	35	22.9	32.8	K
9.3		25.6	35.4	
9.2		26.9	26.2	
9.3		31.8	43.4	
8.6		38.3	11.4	K
9.3		41.4	20.8	
9.5	36	9.6	57.9	
9.5		14.9	41.7	
8.3		22.5	0.3	K
9.4		30.0	58.9	
9.3		42.4	48.9	
8.9		44.7	13.3	K
9.5		45.4	54.1	B
8.8		54.8	34.7	
8.6		55.7	23.0	K
8.6	37	0.1	25.9	K
9.4		0.5	58.1	
9.2		4.8	17.1	B
9.2		10.8	20.6	
9.5		15.2	19.6	B
9.5		17.3	25.6	
9.4		35.3	23.5	B
8.0		45.7	50.6	K
9.3		50.0	10.7	
9.0	38	18.8	52.2	
9.5		21.6	58.2	
9.3		31.6	1.0	
9.3		33.7	14.3	a
9.4		50.9	1.9	
9.4		52.5	12.8	
9.4		56.8	41.7	
9.4		57.8	55.5	
8.6	39	0.2	15.1	
8.9		3.0	29.5	
9.4		3.7	4.3	a
9.2		10.1	20.6	
9.4		16.8	8.1	
9.5		23.6	45.1	
9.4		42.4	47.9	
9.1		46.8	50.7	
9.3		58.5	29.2	
9.5		58.6	50.1	
9.4	40	4.9	7.1	
9.5		8.7	21.3	
9.5		16.2	8.3	
9.4		17.5	27.9	
9.4		19.3	25.5	
8.4		36.3	43 4	K
10pr.		+ 33.65	— 0.54	

1301—1360					1361—1420					1421—1480					1481—1540					1541—1600				
	6ʰ		+12°			6ʰ		+12°			6ʰ—7ʰ		+12°			7ʰ		+12°			7ʰ		+12°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.6	40	42.8		46.6	K	7.0	49	20.2		5.5	K	9.3	58	14.4		50.2	aR	8.8	8	49.3		21.8		9.5	17	47.0		38.5	
9.5		52.7		11.8		9.5		28.5		14.9		9.5		24.8		35.7		9.5		55.2		55.0		9.4		59.3		35.8	
9.2	41	6.2		2.9		9.4		30.9		1.2		9.4		25.7		23.1		9.5	9	9.5		11.3		9.5	18	14.2		34.3	
9.2		12.9		41.7		9.5		53.0		24.4		9.5		29.0		7.1		9.5		14.5		5.4		9.5		20.1		48.8	
9.1		13.8		20.8		9.5		56.1		48.9		8.8		51.3		6.0	K	9.1		19.9		36.7	a	9.3		38.8		4.0	
8.1		22.6		14.6	K	9.5		59.6		18.7		9.3		54.9		59.3		9.5		23.0		38.0		8.8		40.3		38.5	
9.4		26.3		11.9		9.0	50	20.7		8.3		8.8		55.1		32.9	Kb	9.5		30.5		4.9		9.4		49.0		54.2	
9.0		27.7		54.4	K	9.4		23.1		3.0		9.5	59	8.5		56.8		9.5		43.1		48.2		7.5	19	5.5		14.4	L
8.0		50.0		4.5	K	9.5	51	4.2		31.9		8.9		39.4		35.7	K	9.5		52.2		26.3		9.3		14.9		27.4	
7.7		57.2		13.3	K	9.5		14.0		50.7		8.1		49.2		47.9	K	9.5		56.6		59.5		9.5		16.7		27.2	
9.3	42	31.8		33.9		9.2		14.8		14.8		9.5		55.9		33.4		9.5		59.0		39.9		8.7		23.5		57.0	K
9.1		32.9		29.6		9.5		30.0		31.7		9.4	0	4.6		3.7		9.3	10	34.6		40 4		9.4		37.2		1.5	
9.3		35.4		1.7		9.5		30.6		55.2	a	9.2		10.7		14.2		9.5		34.8		3.5		9.4		41.0		55.9	
9.3		37.7		4.2		9.5		41.5		29.0		9.3		10.8		0.5		8.6		52.1		34.7	K	9.4		46.9		6.0	
9.5		39.3		0.7		9.5	52	3.0		33.3		9.5		24.3		37.1		8.2		53.5		5.9	K	9.5		51.6		42.6	
9.3		42.1		21.6		9.5		5.1		5.0		9.3		32.5		22.5	a	9.5	11	1.2		33.3		8.5		54.2		27.3	K
9.1		52.3		24.0		9.5		8.1		33.3		9.5		52.6		44.3		9.5		19.3		18.0		9.3	20	2.6		52.8	
9.2		57.3		20.3		9.5		15.0		39.3		9.5		56.9		29.2	a	9.5		29.4		4.8		9.5		5.0		50.9	
8.5	43	4.0		37.8	K	8.8		15.5		6.9		8.8		57.3		23.7	K	9.5		46.9		34.7		9.0		16.7		28.4	K
9.1		25.0		53.2	a	9.5		26.6		22.5		9.2	1	22.2		9.6		9.5		52.7		55.8		9.4		20.1		55.9	
9.0		30.8		32.3	K	8.1		28.3		55.1	K	9.3		34.0		21.7		9.2	12	20.1		25.4	a	9.5		21.5		10.4	
8.8		40.6		51.6	K	8.4		31.8		56.5	K	9.2		36.7		1.1	b	9.5		37.9		44.2		8.5		43.1		26.1	K
9.2		47.3		16.5		8.7		35 0		2.1		9.4		38.1		1.2		9.5		39.4		47.5		9.5		45.4		11.7	
9.4		50.5		13.8		8.0		49.3		36.0	K	8.7		57.0		46.8	K	9.0		40.6		25.7	Kb	8.0	21	12.9		44.3	K
9.0		54.6		24.9	K	9.5		54.2		48.4		9.4		57.4		31.2		9.5		42.0		6.2		9.5		35.1		11.5	
9.4	44	4.3		29.9		9.5	53	9.1		6.9		9.3	2	2.5		38.1		8.8	13	1.2		42.2		8.8		36.8		58.5	K
8.9		4.3		21.1	K	9.4		9.4		16.9		9.5		3.4		39.3		9.4		12.0		23.8		5.0		44.1		18.1	Lb
9.4		9.0		28.5		9.5		19.6		45.2		9.2		28.6		46.6		9.5		36.9		38.9		9.2		48.4		35.2	K
8.5		26.9		4.5		9.5		23.6		45.7		9.5		29.1		12.8		9.0		42.8		10.5		9.4		54.3		37.4	a
9.1		27.0		22.4	K	9.3		35.3		32.7		9.5		35.7		13.2		9.5		44.6		17.9		8.7	22	2.5		9.5	
9.4		38.4		9.4		9.5		37.4		59.6		9.2		44.2		50.1		9.5		47.7		34.1		9.5		15.2		16.7	
9.3		55.7		21.4		9.5		44.7		23.2		9.4		55.8		12.0		9.0		49.6		24.6		9.5		20.5		57.6	
9.0	45	4.1		10.2	K	9.5		55.6		12.3		9.2	3	6.0		21.5	a	9.5		50.8		38.3		9.5		27.1		19.1	
9.2		19.5		13.1		9.2	54	8.7		46.9	K	9.2		16.6		21.7		9.1		52.9		6.2	a	8.7		59.8		33.3	K
9.0		46.3		29.7		8.0		10.7		47.1	K	9.1		24.2		27.8	b	9.5	14	9.6		25.9		9.0	23	9.1		22.4	K
9.3	46	2.2		58.1		9.5		19.1		19.8		8.5		26.4		41.1		9.0		10.1		27.4		9.4		15.0		32.1	
8.8		25.0		43.6		9.5		39.5		24.3		9.3		29.9		8.0		9.5		19.3		3.8		9.1		18.4		35.6	a
9.3		30.5		45.4		9.5		46.0		53.6		9.3		40.6		47.1		9.5		21.0		15.1		9.5		23.6		19.5	
8.7		32.4		37.5		9.5		49.8		57.6		9.5		43.7		27.2		8.8		29.0		6.7	K	9.3		31.1		20.6	
9.5		36.1		14.3	B	9.3		56.7		46.8	K	9.4		55.0		52.2		9.5		35.3		51.4		9.5		48.0		20.6	
9.5		42.9		44.3		9.4	55	10.4		45.6		9.5	4	9.1		50.0		8.5		48.1		10.9	Kb	9.5		53.5		26.2	
9.5		43.9		19.3		9.3		11.0		29 1		9.5		12.6		45.1		9.5		49.1		20.4		7.5		54.5		58.0	L
9.5		49.7		20.8		8.8		13.5		4.2		8.2		21.4		46.2	B	8.8	15	39.6		21.5		9.3	24	7.3		40.1	
8.0		50.6		8.8	L	9.5		21.4		27.2		8.6		46.1		9.6	K	9.3		41.2		28.6	a	9.5		15.9		42.2	
9.4		52.3		57.8		9.5		37.6		58.4		9.2		58.3		41.4		9.5		47.4		58.4		9.2		16.5		57.9	
9.4	47	4.0		2.3		6.5		43.9		48.2	K	9.1	5	11.9		40.3		8.4		56.6		21.4	K	8.8		19.7		25.3	
9.5		7.4		32.4		9.1		57.8		35.1		8.9		55.8		6.4		9.5	16	4.3		40.1		9.4		38.6		2.7	
9.2		8.8		45.7	a	9.0	56	24.3		23.9		9.5		57.3		14.8	a	9.4		6.2		42.3		9.3	25	4.0		51.6	K
9.4		12.1		53.3		9.3		41.5		39.0		6.5	6	27.5		21.7	B	9.5		13.2		17.7		9.5		4.5		36.1	
9.5		32.0		10.9		9.0		51.4		18.4		9.4		28.0		12.2	a	9.2		14.9		40.1		9.5		21.8		11.5	
9.5		37.0		19.6		9.5	57	3.9		30.5		9.0	7	3.9		58.6		9.0		19.5		9.7		9.3		22.3		12.1	B
9.1		40.9		22.6		9.3		4.1		57.5		9.5		10.5		27.0		9.5		22.8		51.8		9.4		24.5		8.6	B
9.3	48	0.6		48.9	a	9.1		15.3		5.9		9.5		14.3		31.3		9.5		25.0		40.1		9.5		28.0		6.1	
8.0		4.8		45.8	L	9.5		22.0		43.4		9.1		14.5		35.5		9.5		47.1		57.2		9.4		28.4		52.9	
9.2		12.5		7.2	a	9.3		48.7		13.3		9.5		22.9		26.5	a	9.4	17	7.5		52.3		9.5	26	20.0		21.2	
9.5		25.7		50.8		9.5		51.2		39.6		9.5		47.2		16.8		9.5		13.3		37.2		7.7		27.3		36.7	L
8.8		26.0		34.3	L	9.4		52.8		59 6		9.0	8	16.6		42.4		9.0		17.7		27.3		8.4		31.5		15.4	
9.5		43.1		41.9		9.5	58	1.1		1.5		9.5		19.3		1.9		8.5		20.9		27.9	K	9.5		38.7		6.5	
9.5	49	4.6		52.2		8.7		5.9		50.4		9.5		24.2		4.4		9.5		45.0		53.6		8.4		39.5		4.6	B
9.5		10.4		30.8		8.9		11.6		0.6		9.5		40.2		17.5		9.4		45.0		41.0		9.4		52.8		16.5	
		+		−				+		−				+		−				+		−				+		−	
10pr.		33.63		0.64		10pr.		33.60		0.77		10pr.		33.57		0.91		10pr.		33.53		1.06		10pr.		33.50		1.17	

1594ᵐ var	25	55.5	3.1

1601—1660					1661—1720					1721—1780					1781—1840					1841—1900				
	7ᵐ		+12°			7ᵐ		+12°			7ᵐ—8ᵐ		+12°			8ᵐ		+12°			8ᵐ		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	26	52.8	13.0		9.3	36	53.5	54.6		8.2	48	55.4	4.4	B	9.4	1	0.5	16.1	B	9.4	19	34.0	50.0	
8.7	27	4.1	23.0		9.5	37	12.9	36.4		9.3	49	2.3	34.4		9.3		1.5	22.6	K	9.2		34.0	8.7	α
8.9		5.3	29.0		9.4		26.1	52.0		9.5		19.1	37.2		9.0		10.5	23.4	K	9.5	20	1.6	38.7	
9.5		9.7	49.7		8.6		31.5	5.4	K	9.5		23.5	40.3		9.5		56.4	50.8		7.8		5.2	10.1	K
8.3		17.0	10.2	Kb	9.5		38.7	12.0	α	9.4		32.2	56.4		9.5	2	6.7	56.3		9.0		22.8	30.7	
9.5		17.4	13.1		9.4	38	13.3	28.8		9.5		42.9	35.6		9.5		20.3	2.9		9.3		30.5	40.7	
9.5		32.0	52.7		9.3		33.1	37.1	B	9.5		54.0	45.0		9.1		24.1	13.3		9.3		49.5	30.0	
9.2		33.0	14.9	K	9.5		34.1	39.3		8.5	50	1.6	25.0	K	8.8	3	41.5	15.0		9.5		59.1	57.4	
9.5		43.3	52.1		9.5		37.0	2.3		8.6		8.3	2.5		9.2	4	31.4	3.1		9.2	21	5.8	19.5	
9.5	28	1.9	27.0		9.2		52.3	40.7	b	9.5		23.2	40.4		9.1		37.1	33.1	b	9.3		12.8	37.3	
9.5		4.1	22.6		9.4	39	1.9	27.9		9.5		31.9	50.3		9.5		49.5	24.1		9.0		25.4	4.3	K
9.4		27.0	48.5		9.4		3.0	11.0		8.6		40.9	50.3	K	9.3		56.4	36.6		9.2		27.1	51.3	K
9.4		27.2	17.2		8.8		13.4	6.9		8.2		41.7	30.0	Kb	9.1	5	29.8	8.7	b	8.8		35.7	55.9	K
9.5		28.7	45.7		9.3		20.2	33.2		8.3		55.7	5.2	K	9.4		48.1	33.1		9.1		54.2	4.7	K
8.2		48.1	23.9	K	8.7		53.2	29.3	K	9.5		58.5	58.2		9.3	6	2.8	34.2		9.5	22	35.5	50.2	
9.3		54.6	31.0		9.4	40	13.3	57.3		8.4	51	59.3	51.0	B	9.0		3.8	42.8		9.5	23	0.2	34.1	B
9.1	29	0.2	4.6		8.5		21.8	38.2	K	9.3	52	19.0	1.2		9.4		9.7	23.8		9.5		1.2	38.1	
9.5		20.8	9.9		8.5		42.7	33.6	K	8.0		19.3	36.1	K	9.5		14.3	58.2		8.5		16.7	19.8	K
9.5		40.3	40.0		9.0		43.8	4.9		9.5		21.0	5.5	B	9.5		46.5	29.3		8.0		18.4	7.3	K
9.4		55.4	20.2		8.8		47.6	20.0		9.2		38.4	14.4		9.5		51.8	34.5		9.4		27.8	5.0	B
9.4	30	2.3	12.5		8.7		49.8	3.6		9.1		38.7	30.1		9.5	7	49.5	34.8		9.5	24	4.0	54.5	
9.5		26.8	29.6		9.5	41	18.7	32.2		9.4		41.1	1.7		9.5	8	8.7	57.8		9.4	25	55.8	5.2	
9.5		29.5	43.7		9.0		25.4	43.0		8.5		55.8	50.4	K	var		33.9	10.1	B	9.4		58.3	51.0	
9.5		41.2	45.5	α	8.8		31.5	51.5		9.3	53	28.6	1.2		9.0		37.1	34.5		9.3	26	23.9	0.8	
9.4	31	1.4	24.2		7.6		37.2	30.6	K	9.4		31.0	57.0		9.5		40.3	5.7	B	9.5		34.4	27.1	
7.8		2.0	11.6	K	9.4		41.4	29.4		9.5		33.4	5.1		9.2	9	6.1	27.8		9.3		38.8	44.2	
9.5		43.2	46.0		9.5	42	0.6	20.6		9.0	54	12.7	19.3		9.3		15.3	52.1	B	9.0	27	20.4	22.6	L
8.7		53.1	44.4		9.5		14.5	13.1	α	7.3		29 3	50.9	Kb	9.5		40.1	9.8	B	9.0		26.6	30.7	B
9.0	32	14.7	9.1	K	9.3		24.7	26.7		8.0		29.7	38.0	K	9.4		43.6	31.3	B	9.0		31.1	32.7	L
8.5		14.9	18.6	K	9.5		53.5	16.7		8.9		37.2	16.1		9.1		52.8	51.8		9.0		33.3	36.9	L
9.2		19.8	27 0		8.8	43	1.4	15.9		9.0		38.7	27.4		9.5	10	1.5	39.3		9.0	28	29.4	21.6	K
9.5		27.0	36.8		9.5		11.3	37.7		9.5		44.2	26.0	α	8.5		10.3	6.2	K	8.5		33.4	11.6	K
9.5		29.4	34.1		9.5		32.0	13.8		9.3	55	16.8	44.0		9.4		32.1	56.7		9.5		52.3	33.1	
9.5		36.3	50.7		9.5		35.4	7.6		6.9		28.1	35.0	K	9.5	11	10.2	5.2		9.3		55.4	10.9	K
9.5		46.6	14.4		9.5		58.0	16.9		9.5		41.3	15.0		9.5		12.8	30.7		9.5	29	27.5	59.2	
9.5	33	4.2	49.9		8.5	44	1.1	58.3	K	9.2		57.0	19.8		9.4		20.4	0.3		9.0		41.4	38.0	
9.5		4.7	27.7		9.5		6.1	19.7		9.0		57.6	49.8		9.5	12	4.1	50.8		9.5		47.3	27.2	
9.5		7.6	19.8		8.8		30.6	23.2	S	9.3	56	16.6	58.0		9.1		6.0	5.0	b	9.0	30	12.6	27.6	K
9.5		11.4	46.7		9.0		31.1	23.5		8.2		20.4	42.4	K	9.5		19.8	19.9		9.3		12.8	53.0	
9.4		24.3	42.1		9.5		34.0	4.0		8.9		42.7	28.9	K	9.5		24.8	58.5		9.3		19.8	56.3	B
9.5		25.0	6.4		8.4		43.6	24.5	L	9.5		50.0	59.2	B	9.3	13	53.8	15.4	b	9.0		25.3	59.2	L
9.5		32.2	40.5		9.2	45	26.2	4.0		8.7		52.8	36.2	K	9.4	14	28.2	3.7		9.4		47.7	3.3	
8.8		56.0	5.5		9.4		29.8	27.3	L	9.5	57	18.1	27.9		9.5		30.8	10.2		9.1		57.6	33.8	K
9.2		57.8	41.9	b	9.4		30.4	17.0		9.3		21 4	43.2		9.5		52.4	51.1		9.5		57.9	19.8	
9.0	34	9.0	22.3		9.5		31.7	34.2		9.5		31.8	53.8		9.3		55.1	58.4		9.5	31	17.7	1.7	
9.4		22.4	20.0		8.9		39.6	22.9		9.5		40.5	34.1		8.8	15	9.8	39.3	K	9.0		47.9	30.0	K
9.5		29.6	58.9		9.5		45.5	55.9		9.5		40.8	11.5		9.3		22.0	4.6	K	9.5		48.2	3.6	
9.5		35.5	53.5		9.4	46	37.9	10.8		9.5		49.5	21.6	α	9.5		35.5	17.9		8.1		55.0	2.3	K
9.3		37.4	45.1		9.5		41.2	27.8		9.5	58	55.1	24.4		9.5		37.1	32.2		9.5		56.1	6.7	
9.5		47.4	3.8		9.0		47.0	44.6		8.7		57.7	21.6	Kb	9.5		55.1	28.9		9.3	33	19.9	26.1	
9.0	35	4.0	3.4		9.5		52.7	3.8		9.5	59	7.4	43.9	α	9.0	16	52.7	11.9	L	9.0		43.4	41.1	
9.4		21.1	47.2		7.3		58.2	56.7	Kb	9.1		17.2	37.2	K	8.2		56.1	42.2	K	9.4		46.3	28.6	
8.8		22.5	13.3		9.4	47	4.0	50.6		9.5		20.8	40.7		9.2	17	3.6	39.1		9.5	34	1.8	4.8	
9.3		26.6	23.2		9.5		23.6	23.3		9.5		26.7	58.5		9.5		34.8	20.2		9.4		7.5	46.3	
9.4		55.0	20.8		8.5		59.8	11.0	B	9.5		32.1	0.8		9.5		37.4	53.7	B	9.4		45.3	0.5	
8.9		56.1	41.8		9.3	48	14.4	6.4		9.5		33.1	14.0		9.5		37.4	52.4		9.5		47.3	4.8	
8.8	36	20.6	59.4	K	8.0		26.5	7.9	B	9.2		46.5	5.7		9.5	18	27.1	46.0		9.5	35	4.1	8.3	
8.5		32.7	16.2		9.4		26.5	58.0		9.3	0	26.8	21.3	α	9.5		38.5	14.3		9.5		27.9	13.3	
9.5		34.4	4.9		9.5		48.0	10.9		9.2		35.2	35.2	K	9.2	19	25.4	17.9	B	9.4		58.6	47.0	
9.4		35.6	22.3		9.5		49.5	54.2		9.5		52.5	37.6		9.2		32.5	27.3	B	9.2	37	15.9	56.4	K
10pr.		+ 33.45	— 1.31		10pr.		+ 33.39	— 1.45		10pr.		+ 33.32	— 1.60		10pr.		+ 33.22	— 1.80		10pr.		+ 33.09	— 2.01	

1820ᵃ			
9.5	12	53.7	14.7	b

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	8°		+12°			8°—9°		+12°			9°		+12°			9°		+12°			9°—10°		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	37	30.8	51.3		9.0	56	53.8	7.4		8.5	13	4.2	34.5	K	9.5	35	31.5	23.1		9.5	57	23.9	46.0	
9.3	38	4.6	30.0		9.5	57	3.6	58.0		9.0		7.9	32.3	K	8.3		52.1	49.1	Kb	9.5	58	56.0	14.4	
9.5		57.3	16.4		8.7		3.6	8.1	L	8.5		23.8	51.5	K	9.5		53.4	21.6		9.5	59	0.7	18.2	
6.2		59.6	38.3	K	9.5		55.8	42.5		8.6		30.7	57.9	K	9.5	36	9.2	4.4		9.5		27.9	25.1	
9.5	39	36.1	48.7		9.0	58	11.9	30.3		9.5		55.2	54.5		9.5	37	20.9	46.0		9.5	0	21.2	0.5	
8.7		37.6	41.1	L	9.5		35.8	10.2		9.2	14	18.7	53.7	K	9.5		28.7	36.4	B	9.5		28.9	12.6	B
9.5		55.4	20.4		9.3	59	3.4	46.6		9.4	15	40.3	7.2		9.5		45.4	36.0		8.5		29.4	42.4	K
9.4	40	7.2	9.2	B	9.5		9.5	1.3		9.5		48.9	5.1		9.4		53.9	39.9		9.5		34.7	13.4	B
9.5		12.4	51.5		9.5		33.6	26.0		9.5	16	12.5	56.0		9.5	38	9.9	9.8		1.3		38.9	40.1	K
9.5		18.3	24.0		9.4		33.9	11.3	B	9.5		19.5	29.6		6.2		34.3	29.2	Kb	9.4		43.1	48.9	B
8.5		22.6	6.2	K	9.2		39.5	0.9		9.4	17	20.0	48.5	b	9.2		58.3	29.8	K	9.5	1	10.9	5.0	
9.5	41	16.8	52.5		9.5	0	14.0	3.4		9.5		36.4	6.7		9.1	39	12.6	59 6		9.5		19.2	52.5	B
9.5		36.9	23.0		7.5		19.8	31.4	Lb	9.5		43.5	17.0		9.4		27.0	5.6	B	9.5		24.4	53.3	B
8.5		37.3	42.1	K	9.5		34.4	9.5		9.5	18	11.7	23.3		9.5		32.9	2.9		9.4		36.4	57.1	
9.5		41.8	48.7		9.5		49.9	45.0		9.5		46.3	20.0		7.0		38.9	15.0	Lb	9.5		36.9	29.3	
9.5		52.9	7.7		9.5	1	13.8	23.4		9.5	19	6.0	44.9		var		45.4	5.8	L	9.3	2	17.3	56.7	
9.5		59.4	14.0		9.5		16.3	56.1		9.5		27.5	14.2		9.5	40	24.0	26.3		9.3		23.2	59.1	
9.3	42	5.8	27.5	K	9.5		21.3	43.2		9.5		38.7	19.5		9.5		28.5	38.6		9.5		30.4	0.3	
9.3		15.8	23.0	K	7.0		54.8	9.5	L	8.7		50.0	1.9	K	8.5	41	12.1	46.6	Kb	9.0		42.3	24.5	K
9.5		19.9	27.2		9.2	2	19.8	5.7		9.4	20	21.3	49.9	B	9.5		44.0	0.6		8.5		42.9	18.1	K
9.5		19.9	54.0		8.5		24.3	32.0	K	9.0		39.0	50.0	K	9.0		48.9	46.7	K	8.6		55.3	31.7	K
9.5		45.8	37.9		9.5		29.4	14.0		9.5		39.4	47.9		9.5		51.9	3.2		8.2	3	49.1	45.0	K
9.5		52.1	56.7		9.5		34.4	42.8		8.5		42.0	15.3	K	9.5	42	6.7	10.9		9.5	4	0.0	6.8	
9.3	43	22.4	51.3		9.5	3	0.9	40.0		9.2		51.2	7.0		9.5		23.9	46.7		9.5		6.9	32.7	
8.0		30.8	39.4	L	9.1		17.5	59.0	K	9.3	21	45.4	3.7		6.8	43	1.9	30 7	K	9.5		25.6	6.1	
neb		31.0	20.0		9.5	4	5.4	0.9		9.5	22	4.0	33.8		9.5		13.2	52.3	B	9.5	5	25.9	29.3	R
8.0		53.8	25.4	L	9.5		23.8	0.5		9.5		32.0	50.0		9.4	44	21.6	54.0		9.2		36.5	51.9	K
9.5	44	1.1	58.5		9.5		28.9	20.9		9.5		37.0	23.3		9.2	45	36.7	19.5	b	9.2		41.4	3.2	K
9.3		12.4	50.6		9.5		33.4	35.2		8.8	23	12.7	29.9	Kb	9.1		48.9	20.4		9.3		52.8	4.0	B
9.5		21.1	15.7		9.0		50.8	40.4		9.5		52.0	17.3		9.3	46	36.5	7.1	B	9.5	6	1.4	13.4	
9.2	45	2.1	53.8	b	8.7	5	0.0	50.2	K	9.5	24	28.0	4.2		9.5		41.6	45.6		8.5		14.6	24.4	K
9.4		7.0	14.1		9.0		10.3	22.7		9.5		38.0	35.9		9.5	47	1.7	25.8		9.2		25.4	26.6	K
9.5		35.9	42.1		9.3		29.4	31.7		9.2		46.0	22.6	K	9.5		12.9	32.4		9.5		34.3	49.4	B
9.5	46	5.2	13.6		9.0	6	16.3	15.0		8.5		51.0	1.8	K	9.3		41.2	4.1		9.5		42.3	58.8	
9.5		34.4	51.1		8.5		33.3	11.6	K	9.3	25	7.7	20.9	K	9.4		56.4	57.0	R	9.5		47.5	32.4	
9.5		41.8	19.5		9.5		46.4	20.5		9.1		49.0	44.2	K	9.5	48	2.5	0.2		9.0	7	25.0	34.2	Kb
9.5		47.7	3.0		8.3		49.8	5.5	K	9.5	26	7.5	43.1		9.3		36.9	36.8		7.9		26.3	24.0	K
9.3	47	6 2	4.6		9.5		51.7	2.2		9.2		32.7	9.9	Kb	9.5		47.0	38.2		9.5		35.3	13.7	B
9.5		28.4	40.0		9.5	7	5.7	59.2		9.5		47.6	36.7		9.3	49	9.8	16.0		9.0	8	2.6	56.4	
9.4		37.4	54.5		9.3		6.1	47.0	K	9.5	27	5.1	37.2	B	9.3		28.6	36.6	b	9.5		15.0	43.9	
5.8	48	0.1	11.4	Kb	9.4		21.4	31.7		9.5		32.0	22.5	B	9.4		49.9	4.6		9.0		24.9	24.1	
8.5		35.8	58.7	K	9.3		33.9	17.4		9.5		43.3	53.5		9.5		54.7	12.0		9.2		28.0	9.3	
9.0	49	7.3	46.0	K	9.5	8	26.8	50.8		9.3		50.7	11.2		9.5	50	5.9	27.5		9.5		30.9	15.5	
9.5		8.6	11.9		9.3	9	13.4	41.4	b	9.5	28	7.5	7.2	B	9.5		39.9	7.4	a	9.5	9	33.9	53.7	
9.5		39.4	22.7		9.5		19.3	44.6		9.5		15.7	25.7		9.4	51	10.8	0.6		8.6	10	3.0	0.6	L
9.5	50	10.6	39.7		9.5		21.1	16.1		9.5		18.5	44.1		9.0		13.1	8.3		9.5		13.5	2.9	
9.5		12.3	51.7		9.5		42.9	18.2		8.0		32.4	5.0	B	9.5		15.9	39.1		9.5		17.4	22.7	
4.3		33.3	25.7	K	9.5		58.0	49.8	B	9.5	29	2.5	51.1		9.0		54.0	17.0	K	9.1		32.6	32.4	b
9.5	51	5.4	16.4		7.0		59.9	6.5	K	9.5		11.5	44.2		9.5	52	11.6	35.8		9.5	11	25.9	2.2	
9.5		33.2	38.7		9.1	10	12.5	45.8		9.0		52.5	32.0	L	9.2		25.6	49.0	K	9.0		34.3	42.2	K
8.5		42.8	30.0	K	9.5		16.0	5.6		9.5	30	21.0	23.6		9.0		43.7	29.8	K	9.5	12	0.9	35.5	
9.3		48.6	7.9		9.3		20.8	55.8		9.1		51.0	41.4		8.0	54	8.4	50.9	K	9.5		23.9	39.7	
9.5	53	22.3	43.8		9.5		40.7	9.4		9.1		58.7	41.8	b	9.5		43.6	41.3		8.1		43.5	4 8	K
9.5		47.4	8.0	Bb	8.7	11	2.5	55.9	K	9.5	31	2.3	51.9		9.5		46.6	37.3		9.5		48.9	32.7	
9.4	54	18.4	58.5	b	9.5		9.7	2.7		8.5		42.0	49.4	K	9.5	55	26.9	32.1		9.0	13	51.8	30.7	
9.5	55	12.9	24.4		9.4		21.5	38.2		8.8	33	20.3	12.2		9.4		48.9	7.4		9.5		59.9	10.5	
9.5		43.8	16.4		9.4		31.9	56.1		9.5	34	1.0	17.4		8 2	56	0.3	49.4	K	9.5	14	0.9	42.5	B
9.5		45.1	24.0		9.3		35.4	6.9		9.5		9.3	21.2		7.5		22.2	20.2	Kb	9.5		4.6	7.9	
9.5	56	29.3	37.3		9.5	12	11.3	42.2		9.5		19.4	25.4		9.5		56.9	31.2		9.5		5.5	22.5	
8.8		34.3	47.4	K	8.9		36.8	8.2		9.5		53.5	22.0		9.5	57	8.6	32.8		8.1		26.8	2.7	K
		+	—				+	—				+	—				+	—				+	—	
10pr.		32.95	2.20		10pr.		32.77	2.41		10pr.		32.58	2.59		10pr.		32.35	2.79		10pr.		32.13	2.93	

2201—2260					2261—2320					2321—2380					2381—2440					2441—2500				
	10m		+12°			10m—11m		+12°			11m		+12°			11m—12m		+12°			12m		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	14	38.3	53.7		9.5	41	19.8	49.3		9.1	11	21.0	40.6	K	8.5	41	39.8	41.6	K	9.0	9	23.8	17.0	
9.5		39.6	30.3		9.5	42	4.4	16.4		9.1		27.4	20.8		9.0		41.9	15.8		8.5	—	38.1	34.9	
9.0		55.7	12.9		9.5		7.9	30.2	B	9.4		35.4	13.0	B	9.1		44.3	25.0		8.8	10	15.6	1.2	K
9.5	15	10.0	42.5		8.8		55.0	46.3		9.3	12	7.2	7.4		9.5		53.2	57.3		9.5		31.2	35.4	
9.5	16	0.9	1.5		8.7	43	6.1	10.0	K	8.8		29.7	50.4		9.5	43	40.0	6.8		8.8		35.3	36.2	
9.2		8.3	8.7		6.8		30.4	21.4	K	9.2		40.7	52.9		9.3		47.2	24.0		8.7	11	19.7	35.6	Lb
9.3		35.9	10.6		9.5	44	0.6	4.5		9.5	13	22.3	27.0		9.4		49.0	12.0		9.5	12	15.9	32.9	
9.0	17	0.9	5.9	R	9.0		8.3	14.0	K	8.8		25.8	0.1	K	7.2		59.5	37.2	Kb	8.1		29.2	24.4	L
9.5	18	9.9	58.9		8.2		21.9	7.5	K	8.8		40.1	2.2	K	9.3	44	38.1	11.3		9.3		38.5	25.8	
9.5		43.0	50.8		8.3	45	13.3	3.3	K	9.3	14	11.8	8.2		9.5		52.3	48.8		9.2	13	7.5	11.0	
7.2	19	31.4	3.0	K	8.8		48.9	19.1	K	9.5		15.6	6.9		9.5		53.2	37.9		9.5		10.3	55.2	
9.5		59.4	22.0		8.8	46	3.2	5.2	K	9.5		52.3	25.5		8.2	46	39.4	51.8	K	9.5		28.3	28.8	
9.2	20	13.3	49.2	K	9.5		33.2	45.3		9.0	15	12.1	22.5		9.3		47.6	50.6		9.5		46 8	5.2	
9.5		24.7	8.8		9.5	47	23.0	34.8		9.5		38.7	31.7		9.5	47	8.9	33.2		9.3		49.4	56.3	
8.0		47.0	13.2	K	8.9	49	15.8	42.6		6.1	17	27.5	14.0	K	8.4		29.7	29.5	L	9.3	14	3.5	38.0	
9.5		53.0	30.9		9.5	50	20.7	57.5		8.6	19	7.3	23.2	K	9.5		46.8	28.8		9.5		41.1	39.6	
7.8	21	43.7	55.5	K	9.5		20.9	6.7		9.5		30.3	12.7		9.0	48	11.1	48.2		9.5		47.3	22.7	
9.2	22	38.0	56.5		9.5		23.9	2.8		7.0	20	30.2	47.3	L	8.7		20.8	3.6	K	9.3	15	30.6	24.5	
8.5		44.2	22.3	Kb	9.3		56.8	32.0		9.3	21	55.1	49.8		9.5	49	7.7	0.3		9.0		39.5	11.8	
9.5	23	19.1	46.5		9.5	51	47.2	9.5		9.3	22	0.9	26.6		9.0		43.1	34.3		9.3		58.7	26.5	
9.5		59.5	17.2		8.8		49.3	40.9	K	8.3	23	27.2	19.4	R	9.5		49.2	52.1		9.4	16	1.0	14.8	B
9.2	25	23.0	45.1	B	9.0		50.3	24.5	K	8.8	24	32.5	27.9	K	9.5	50	53.5	32.2		8.5		20.3	43.6	K
9.5		39.1	19.4		9.5		59.6	7.6		9.2	25	20.3	57.7	K	9.5	51	0.9	0.4		9.3	17	41.9	44.7	a
9.5		51.3	4.5		6.5	52	6.5	29.3	K	9.5		31.4	0.4		9.5		18.0	54.5		9.5		43.6	8.0	
9.5		54.9	39.7		9.5		14.4	40.6		9.3	26	38.4	12.3		8.6		36.4	52.4	K	7.8		58.3	42.7	K
9.5	26	35.3	5.2		9.5		17.7	49.4		9.0	27	3.1	17.0	B	8.5	52	1.3	40.3	K	9.5	19	1.3	59.8	
9.1		40.0	55.4	K	9.5		23.0	55.9		9.0		18.8	37.5	K	9.5		25.9	5.9		9.3		41.6	37.0	
9.2		43.1	36.0		8.0	53	11.5	45.6	K	9.3	28	11.7	11.0		9.3		42.2	40.6		9.5	20	1.2	59.7	
8.2	27	11.1	51.7	K	7.8		27.1	49.7	K	9.4		33.2	10.3		9.3	53	12.1	54.5		9.3		6.3	22.9	B
9.5	28	4.6	42.0		8.8		48.1	19.4		9.3		45.9	55.9		9.5		17.7	25.	B	9.3		11.3	5.1	B
9.3		7.3	6.2	K	9.3	54	49.2	28.3		9.5		52.4	13.7		9.0		23.9	49.8	K	8.0		14.6	54.0	K
9.2		18.6	2.2	K	9.5	55	39.0	10.7		8.2	29	9.2	58.7	K	9.0		25.3	47.8	K	8.8		28.6	7.6	K
9.5		24.2	59.1		9.5	56	2.8	56.9		8.7		11.1	28.7	Lb	8.8		55.1	7.5	R	9.0		46.7	29.7	B
9.0		25.0	22.7		9.0		3.9	15.7		~~9.6~~		~~10.0~~	~~56.5~~	~~S~~	9.3	54	24.0	20.7		7.3		53.9	38.3	K
8.0		26.4	22.4	K	9.3		8.4	32.0		9.0		39.1	30.8		8.9	55	1.7	18.1	B	9.0	21	5.1	50.7	B
9.5		44.0	56.0		9.3		57.1	20.2		9.0		48.2	19.1		8.3		12.8	41.0	K	9.2		5.4	34.2	B
9.5		48.1	32.2		9.3	57	22.8	12.7		9.5	30	53.7	51.6		9.3	56	31.8	39.3		7.5		12.6	55.4	K
9.1	29	29.6	46.2	b	9.3		27.6	1.4		9.3	31	16.6	8.5		9.3	57	8.5	33.2		8.3	22	11.8	17.5	K
9.5		57.7	5.2		9.3		33.7	6.8		9.3		35.2	21.2		9.3		24.0	51.9		8.8		26.8	32.5	
9.5	32	31.1	59.9		8.7	58	4.9	52.5	K	9.3		58.6	14.4	G	9.0		25.3	27.8		8.8		34.5	38.0	
9.5		33.2	45.7	B	9.5		23.8	5.5		9.3	32	10.8	3.7		8.7		35.5	8.1	K	8.5		34.5	45.7	Kb
8.0		57.0	49.6	K	9.2		41.4	42.5	B	8.8		57.7	0.0		9.5	58	51.3	43.3		9.5	23	10.5	29.7	B
9.5	33	0.5	3.1		9.2		55.5	18.4	b	9.3	33	6.9	47.5		9.3	59	35.8	20.1		9.2	24	3.5	34.4	
9.3	34	18.4	8.0	b	9.2	0	46.1	9.8	b	neb		27.9	17.1		8.8	0	4.5	45.4	K	7.3		19.4	56.1	K
9.5	35	1.3	8.0		9.3	2	23.1	28.6		9.5		48.1	32.5		9.5		43.9	32.2		9.5		55.4	35.3	
9.5		47.0	13.0		8.0		58.8	25.6	K	8.7	34	18.7	46.4	Lb	9.5	1	1.4	36.7		9.3	25	51.6	9.7	
9.5		51.5	36.1		7.0	3	2.3	5.0	K	8.8		32.8	15.5	K	9.3		17.9	36.2		9.5	26	31.1	26.5	
9.4		53.1	28.1	B	9.5		49.8	18.8		8.5	35	11.1	40.0	K	8.0		52.7	5.7	K	7.8	27	17.6	6.1	K
neb	36	18.6	27.7		8.5	6	37.4	39.1		8.9		32.7	7.5	Kb	8.3	2	13.1	1.1	K	7.3		51.4	20.4	K
9.2		41.7	5.7	Kb	9.5		54.8	51.1		9.2		48.3	52.9	K	9.3		18.4	41.7		9.5	28	20.1	7.0	
9.5		41.8	16.6		9.5		56.1	19.7		9.5	36	12.6	26.0		8.7		20.7	50.1	Kb	9.2		35.6	16.7	
9.3	37	17.5	16.2		9.2	8	25.1	23.8		8.8	37	21.6	11.7	K	9.3		50.7	39.6		8.3		41.1	12.0	K
neb	39	7.0	35.0	B	9.5		38.7	22.3		8.8		30.1	21.2	F	8.4	4	34.7	5.6	Kb	9.3	29	19.9	44.7	B
9.5		50.3	59.5		9.2		40.0	21.6	B	9.2		56.7	38.3	b	8.8	5	43.9	44.7		8.3		49.7	58.8	K
9.5		52.8	11.1		8.5	9	12.4	38 8	K	9.2	38	5.2	46.8		8.0		50.4	19.7	K	7.8		52.9	36.9	K
9.5		53.3	35.3	B	9.0	10	3.4	31.0		9.0		26.7	10.6	K	8.0	6	40.4	57.2	Lb	neb	30	22.5	37.7	B
9.2	40	32.8	39.0	K	9.3		32.6	25.1	K	9.5		44.2	55.6		8.7		57.1	38.2	K	9.4		37.0	42.9	B
9.5		50.7	2.2		9.5		41.1	19.8		8.5	40	10.5	31.8	K	9.3	8	12.2	5.0		9.3		38.0	14.2	B
9.5		57.3	54.0		7.0		47.9	47.0	K	9.3		16.6	24.6		9.3	9	2.7	47.7		9.3	31	31.9	5.6	b
9.5	41	19.0	32.7	B	9.3	11	4.9	26.9		9.5	41	2.9	18.1		9.0		8.7	21.4		9.5		59.1	41.6	
10pr.		+ 31.87	— 3.08		10pr.		+ 31.56	— 3.21		10pr.		+ 31.13	— 3.31		10pr.		+ 30.81	— 3.34		10pr.		+ 30.46	— 3.33	

2501 — 2560

m	12ᵐ—13ᵐ	+12°	
9.0	34 23.1	33.8	L
neb	43.7	26.6	B
9.5	48.4	31.9	B
9.5	35 0.3	55.7	
8.5	45.7	34.9	L
9.0	48.9	43.3	
9.0	36 14.7	58.6	
neb	18.0	21.0	B
8.7	38 12.0	42.0	
9.3	50.7	19.4	B
8.6	39 16.3	10.2	
6.6	56.8	45.1	Kb
9.5	57.2	31.9	
9.5	40 23.9	34.7	
9.3	38.0	39.3	
9.3	41 27.1	58.1	
9.4	32.0	35.9	B
7.3	33.9	53.3	K
9.2	43 38.8	13.6	b
9.3	44 11.9	25.4	
9.5	40.4	2.3	
9.2	45 13.1	13.6	
9.2	46 35.0	19.6	
9.5	51.4	38.2	
8.9	56.7	5.1	B
9.5	47 8.8	4.7	
8.5	17.5	41.5	K
8.5	36.8	16.4	K
7.3	48 14.7	16.6	K
9.4	33.2	52.3	
8.7	49 53.1	12.0	Lb
9.3	50 20.3	52.3	
9.5	20.8	56.7	
9.5	27.2	11.1	
9.1	55.8	21.3	
9.3	51 18.3	25.1	B
9.2	38.6	24.9	
9.5	52 8.2	9.5	
9.1	55 2.8	0.7	
8.8	55 3.7	17.2	
8.9	55 45.2	40.0	
9.5	54 45.7	3.1	
9.5	56 2.0	20.3	
8.3	12.8	46.0	L
8.0	45.0	0.7	K
9.2	51.1	4.8	K
9.2	51.7	12.5	
9.4	57 9.4	55.1	B
9.5	42.1	57.6	B
9.0	59 1.1	16.3	
8.8	9.1	27.5	
8.8	10.5	42.5	
9.5	16.9	2.7	
9.3	27.0	12.9	
8.7	0 0.0	3.1	K
9.5	14.8	10.8	
9.3	27.2	53.6	a
9.0	49.7	58.2	K
9.0	1 3.4	51.0	Kb
9.5	2 20.7	53.3	
	+	—	
10pr.	30.08	3.26	

2561 — 2620

m	13ᵐ	+12°	
8.9	3 58.4	27.0	
8.6	4 3.7	59.0	Kb
9.2	49.6	46.7	B
9.3	5 20.0	5.1	
6.0	21.3	19.9	K
9.1	44.0	33.5	Kb
9.1	6 21.9	1.3	
9.3	22.8	51.3	
9.3	28.2	52.2	
9.5	7 2.8	56.0	
9.5	11.0	19.0	
6.4	18.0	6.4	K
9.4	49.1	59.8	
9.3	8 4.3	36.2	
9.4	30.9	54.7	
8.7	32.6	39.2	
9.5	40.3	13.1	
9.5	9 27.2	32.5	
9.5	10 38.0	22.0	
9.3	11 14.6	41.9	
8.7	32.0	25.0	
8.5	36.2	35.8	K
9.2	49.8	26.4	
9.3	12 33.5	47.5	
9.3	37.4	12.1	
9.5	58.6	0.5	
9.5	13 2.7	35.6	
9.5	10.8	6.2	
9.3	27.2	57.7	
9.1	38.5	21.9	b
8.5	14 20.9	36.1	K
9.2	15 42.4	3.0	R
8.3	17 29.2	9.3	K
7.7	19 48.7	40.2	K
8.7	20 10.3	49.0	L
8.5	21 50.3	28.5	L
8.5	55.6	13.7	
8.3	58.0	24.3	K
9.3	23 7.9	4.9	
9.2	24 0.6	20.0	
8.7	25 36.5	36.9	K
8.8	26 5.8	53.6	
9.3	31.5	52.6	
9.4	27 48.5	6.3	
8.2	28 1.2	42.4	Kb
9.5	46.0	0.3	
9.3	29 36.0	53.6	
9.2	47.0	59.7	
8.6	30 37.4	11.7	K
9.0	55.4	1.6	
9.1	31 47.8	24.5	b
9.5	32 16.9	15.3	
8.8	34 30.5	12.0	
8.7	51.1	52.5	K
9.5	36 28.6	32.7	
9.5	42.7	33.7	
9.5	50.6	23.8	
9.0	37 5.2	48.3	L
9.5	38 0.1	6.5	
9.0	12.2	40.1	K
	+	—	
10pr.	29.78	3.17	

2621 — 2680

m	13ᵐ—14ᵐ	+12°	
8.5	38 14.7	12.6	K
9.3	16.3	28.0	
9.0	25.2	9.9	
8.7	32.8	58.6	K
9.5	39 18.6	51.6	
8.5	40 0.2	19.5	K
8.8	4.8	31.0	K
8.8	48.4	30.3	
9.3	42 1.7	37.8	
9.5	16.2	52.3	
8.5	43 48.8	17.1	K
9.5	59.2	8.4	
9.5	44 14.1	28.6	
7.5	46.5	40.1	Kb
6.8	45 12.6	53.1	K
9.3	43.2	32.6	
9.0	46 25.0	13.6	
9.4	39.8	58.9	B
9.5	47 23.0	45.5	
8.8	32.4	59.7	
8.3	48 24.5	48.3	K
9.5	41.2	38.0	
9.0	50 7.4	33.5	
7.6	41.2	40.4	K
9.5	51 2.1	51.2	
9.5	18.5	2.0	
8.9	54 32.9	7.0	K
8.3	55 59.0	36.0	
9.5	56 4.9	12.3	B
9.3	50.7	24.2	
8.7	57 31.8	17.1	K
9.2	56.9	23.5	
8.9	58 13.8	51.2	K
9.3	14.9	24.5	K
9.2	1 8.5	36.9	K
8.9	37.1	7.3	K
8.9	2 5.5	56.0	K
9.4	47.8	34.1	
9.5	50.0	55.0	
8.0	52.8	3.9	
9.5	3 31.0	20.6	
9.5	53.0	1.6	
9.5	53.9	8.9	
9.5	4 32.4	41.5	
8.9	5 11.3	6.6	B
9.0	46.5	18.2	K
6.8	6 47.5	40.8	K
9.5	7 18.7	46.7	
9.5	23.4	33.8	
9.5	58.0	47.8	
9.2	8 21.9	7.9	
9.0	30.0	29.7	
9.4	9 59.3	2.6	K
9.5	10 17.5	45.9	
9.5	19.0	54.4	
9.5	30.8	40.7	
7.7	33.5	0.9	Kb
9.1	41.3	50.8	K
9.5	55.9	40.6	
9.5	12 16.5	40.2	
	+	—	
10pr.	29.27	2.91	

2681 — 2740

m	14ᵐ	+12°	
9.1	12 45.9	13.1	Kb
9.5	13 17.5	34.7	
9.5	39.0	49.8	
8.0	14 25.5	18.3	K
9.5	15 14.4	53.9	
9.4	37.1	16.5	
9.5	56.5	18.6	
9.5	16 6.6	5.2	
9.5	7.7	46.8	
9.4	16.5	39.5	
9.0	41.8	17.0	
9.5	18 23.9	45.4	
9.5	28.5	8.3	
9.3	19 4.2	15.1	K
9.1	45.1	6.6	b
9.4	20 44.9	1.7	
9.1	48.2	45.0	K
9.5	21 20.9	0.4	
9.5	22 1.8	51.2	
8.3	2.0	46.0	L
9.3	44.3	1.7	
9.5	23 30.0	53.3	
9.5	33.5	38.9	
9.5	24 35.5	28.3	
9.5	25 52.9	21.6	
9.4	26 10.8	7.0	
8.9	20.6	6.4	K
9.5	53.4	7.0	
9.5	27 24.9	15.5	
9.5	26.9	25.1	
9.5	43.0	4.7	
9.4	56.0	52.8	
9.5	28 26.2	30.6	
8.8	38.9	8.1	
9.1	53.9	35.8	b
9.5	29 31.7	0.1	
8.8	44.9	47.8	
9.1	30 7.8	58.9	Kb
9.5	42.6	48.5	
8.7	31 21.7	17.4	K
9.5	56.6	54.6	
9.5	32 27.9	44.9	K
9.1	33 19.7	42.7	K
8.0	43.1	54.0	K
8.1	34 9.4	43.7	K
9.5	16.1	59.5	
9.2	19.8	56.6	K
9.5	42.9	42.0	
5.3	46.9	15.5	K
9.5	35 35.8	57.7	
9.5	40.6	34.4	
9.5	37 34.2	57.8	
9.5	50.4	36.9	B
9.5	38 7.4	9.8	
8.3	46.9	32.0	
9.5	39 31.5	26.5	
9.2	36.9	22.4	
9.4	46.4	2.9	B
9.3	52.4	58.6	K
8.5	59.6	5.6	
	+	—	
10pr.	28.94	2.67	

2741 — 2800

m	14ᵐ—15ᵐ	+12°	
8.6	40 10.9	2.1	K
9.3	37.9	10.8	
9.5	57.6	23.7	
9.4	41 1.6	2.9	
9.5	29.8	22.3	
9.5	34.5	39.8	
9.5	38.9	7.5	
9.5	42 1.2	48.8	
9.5	16.5	10.6	
9.5	33.2	40.9	
7.8	43 3.2	55.6	Lb
8.8	57.5	22.1	K
8.0	44 7.2	46.4	K
9.5	15.5	13.3	
9.2	46 25.4	40.1	K
9.5	28.2	25.5	
9.5	41.5	47.5	
9.4	49.7	4.9	
9.5	47 20.2	35.4	
9.5	34.2	28.9	
9.5	49 43.6	4.9	b
9.5	50 12.2	19.3	
9.3	39.2	42.3	
9.2	43.5	44.0	b
9.3	51 42.5	43.8	
9.5	43.1	5.6	
7.8	57.2	39.6	K
9.4	52 6.9	21.7	
9.4	43.5	7.8	
8.5	53 5.5	35.1	K
9.5	54 1.2	12.7	
9.5	55 10.9	44.7	K
9.5	40.8	55.4	
8.6	56 5.4	6.1	K
9.0	31.6	22.2	B
9.4	34.2	4.5	
9.5	38.5	31.0	
9.3	48.3	15.3	B
8.5	54.9	28.0	Kb
9.1	55.6	12.8	
9.5	57 5.5	48.4	
9.5	33.1	1.9	
9.5	58 12.3	9.1	
8.5	27.0	31.2	K
7.8	33.2	26.0	K
8.2	37.2	11.6	L
9.5	0 3.1	35.5	
9.3	7.3	7.4	
9.2	36.2	16.1	B
8.9	45.9	31.9	B
8.8	46.5	47.1	
9.4	58.9	28.4	
9.0	1 22.2	45.4	B
9.4	53.2	37.2	
9.1	3 9.4	53.7	K
6.5	36.2	13.1	Kb
9.5	42.7	48.5	
9.5	51.5	3.1	
9.1	4 10.3	59.8	K
9.4	53.9	31.3	
	+	—	
10pr.	28.66	2.42	

2703ᵐ

9.7	24	23.0	55.6	B

2801—2860					2861—2920					2921—2980					2981—3040					3041—3100				
	15ʰ		+12°			15ʰ		+12°			15ʰ—16ʰ		+12°			16ʰ		+12°			16ʰ		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
7.8	4	54.3	1.1	L	7.7	29	52.3	5.3	K	9.0	51	22.2	8.4		9.0	9	3.4	4.2	K	9.0	28	44.9	51.0	K
8.5	5	2.7	47.5	K	8.7	30	8.3	5.2	K	8.7		45.8	1.9	K	9.5		15.3	39.8		9.4		54.0	49.0	
9.5	6	12.5	1.3		7.0		34.7	47.4	K	9.3	52	5.3	35.3		9.1	10	9.8	7.4	K	9.4		53.4	55.5	
9.2		24.5	59.1		9.5		51.7	57.7		8.5		8.4	41.7	Kb	9.5		12.0	19.3		8.5	29	14.9	12.2	K
9.5		38.2	10.7		8.6		53.0	4.7	Kb	9.5		30.0	49.0		9.4		12.5	29.8		9.5		46.5	11.9	
9.1		42.9	1.3	K	9.5	31	5.7	3.7		9.5		43.0	56.6		9.3		23.7	23.5		9.5		52.5	41.8	
9.1		46.6	6.0	K	9.5		24.0	49.8		9.5		52.5	12.0		9.2		33.2	3.3	B	9.4		58.7	22.5	B
9.3		49.5	37.5		9.5		29.0	32.4		9.5	53	0.6	6.4		9.5		36.7	9.7		8.6	30	2.9	40.1	B
8.5		51.5	35.1		9.5		51.6	59.0		8.9		23.0	49.1	B	9.5		37.7	17.0		9.5		11.0	6.1	
9.0		52.2	49.5		7.2		54.2	45.1	K	8.3		25.8	4.5	K	9.1	11	5.0	55.1	b	9.5		33.0	27.1	
9.2	7	44.5	4.4		9.5	32	7.2	36.2		9.5		54.3	3.7		9.0		57.9	55.5		9.0		47.9	17.5	B
9.5	8	37.3	12.5	B	9.5		49.0	13.3		9.5		55.8	38.8		9.5	12	2.0	33.7		9.4	31	0.7	0.8	
9.5		39.1	17.3	B	9.5		50.2	58.0		8.2	54	3.6	54.5	Kb	8.3		25.4	54.8	K	9.5		19.7	10.1	
9.5		58.2	25.4		9.3	33	12.1	28.0		9.2		29.1	0.4	B	9.5	13	33.5	57.8		7.2		46.1	55.7	K
9.5	10	34.4	7.8		6.5		19.0	31.8	Kb	9.5		46.0	0.7		8.0		39.0	17.3	K	9.5		56.5	20.4	
9.5		40.4	15.2		9.5		45.6	44.5		7.8		48.3	28.4	K	9.2		55.6	23.0		9.4	32	28.9	12.6	
9.5		46.5	26.9		9.5		54.3	28.4		8.5	56	9.3	34.0	B	9.5		59.4	43.8		9.5		37.3	2.3	B
8.7		54.4	20.6	K	9.5	35	8.8	25.8	B	9.4		27.7	0.6		9.4	14	14.1	21.0	B	8.2		49.0	35.3	K
9.5	11	35.6	14.1		9.5		21.3	50.4		9.5		42.6	55.0		9.5		27.7	46.9	B	9.4		59.4	52.8	
9.3		57.5	7.0	B	9.4		25.7	31.1		9.5	57	58.6	43.9		9.5		30.5	43.4	B	9.4	33	15.5	16.0	
9.5	12	31.5	14.4		9.1		50.7	14.1	a	9.5	58	3.4	51.6		9.5	15	10.0	55.8		9.5		30.4	31.8	
9.5		37.8	47.8	b	9.5		52.3	46.4		8.8		57.3	16.4	K	8.9		15.4	45.8	B	9.5		31.2	43.9	
9.5		41.6	26.5		7.0	36	30.3	10.5	K	8.9		59.0	28.8	B	8.3		18.4	35.1	K	6.0	34	6.9	42.1	L
9.3	13	5.9	32.6		9.0		53.0	16.7	K	9.3	59	13.1	1.7	B	9.5		32.0	58.8	B	8.7		56.9	18.3	B
9.5		7.5	47.7		9.4	37	10.3	4.5		8.8		17.1	5.9	K	9.1		54.2	45.1	K	9.5		58.5	28.5	
8.9		44.9	4.8	L	9.5	38	0.4	53.6		8.7		30.1	5.7	K	9.0	16	58.1	0.4	K	9.5		59.0	19.6	
9.5	14	49.2	29.5		9.5		18.3	16.7		9.5		47.1	4.5		9.0	17	59.7	33.1		9.3	36	36.1	29.5	B
9.4	15	17.2	14.4		9.5		19.3	24.3		9.1	0	43.0	19.5	b	9.5	18	11.4	11.1		9.4		36.4	41.1	
8.3		59.9	35.9	K	9.0		29.1	30.1		9.5		53.3	15.0		9.3		15.6	1.9	B	7.1		48.2	41.1	L
8.8	16	59.8	6.5		9.3		42.3	35.0		7.5	1	0.7	46.6	K	9.5		21.7	13.0		9.5		49.4	20.2	B
8.3	17	52.7	15.6		9.5		42.6	26.7		9.5		59.6	36.0		9.5		30.4	36.1		9.5		49.5	46.6	
9.5	18	17.5	11.8		9.1		57.3	32.6	K	8.8	2	1.6	30.9		9.5		52.7	54.6		9.3		59.8	38.8	B
9.1		22.0	43.1	K	9.2	39	0.4	42.4		8.8		2.0	15.7	K	8.2		57.5	15.2	B	9.4	37	2.7	26.1	
9.0		29.4	39.7	K	8.8		3.4	17.1		7.2		38.8	8.0	Kb	9.4	19	46.0	35.9		8.9		3.5	43.7	B
9.5	19	13.3	53.2		9.0		15.0	21.2		9.5	3	3.3	25.5		9.5		57.5	4.0		9.5		4.6	4.1	
9.1	20	49.0	57.6	b	9.5	40	9.0	19.2		9.5		21.1	23.0		8.3	20	0.0	23.8	K	9.4		18.1	53.0	
9.5		58.9	48.9		9.0		11.6	48.1	K	9.5		32.6	8.2		8.8		5.8	55.1	B	9.5		26.8	37.5	
7.0	21	11.9	22.4	K	9.5		47.3	31.3		9.0		40.2	56.0		9.4		14.7	46.4		8.1		52.9	31.1	K
9.5		15.5	42.4		9.5		56.3	50.3		9.4		42.7	2.6		9.3		22.8	8.3		8.5	38	2.8	58.7	K
9.5		44.2	53.4		9.5	41	45.3	38.0		9.4		53.0	3.6		9.5		24.4	16.5		9.2		16.0	8.2	
9.3	22	53.7	37.3	B	9.2		57.6	46.3		9.4	4	1.6	19.5		9.5		33.6	55.3		8.9		48.9	24.3	
9.5	23	20.0	49.0		9.2	42	3.2	53.6		9.5		19.0	33.6		9.5		35.7	46.2		9.5		53.7	52.5	
9.1		26.5	34.6	K	9.2		9.0	35.0	b	9.1		43.1	31.6		9.1		47.4	19.0		9.3		58.0	0.1	
7.5		31.4	29.4	K	7.0		44.8	59.8	K	9.2		44.3	7.8		9.4	21	41.5	26.4	B	9.3	39	14.4	38.0	
9.5		58.2	54.4		9.5		51.0	13.0		9.4		47.1	17.9		8.8	22	44.4	14.5	B	9.0		47.9	35.9	B
9.5		59.3	36.9		9.5	43	18.0	43.9		9.0		54.6	27.1		9.2		45.4	31.4	Bb	9.1	40	19.4	29.7	K
9.5	24	5.0	6.0		9.5	44	45.4	18.1		9.3		58.9	7.8		9.4	23	56.0	26.6		9.2	41	21.8	50.4	b
9.4		22.8	11.1		9.1		48.3	31.3	b	9.0	5	12.7	0.5		9.5	24	31.4	19.3		9.3		47.5	5.9	
9.5		24.0	16.0		7.6	46	25.0	48.4	K	9.5		13.3	6.4		9.5		40.6	53.1		9.3		53.5	42.2	
8.9		57.9	16.0		9.5		44.3	37.5		8.3		17.3	17.1	K	9.0		50.5	38.6	K	9.4	42	2.4	31.1	
9.2	25	58.4	19.1		9.4	48	5.0	48.7		8.5	6	0.2	56.5	L	8.6		53.0	44.4	Kb	8.3		41.4	8.3	
8.9	26	28.9	9.0	K	8.5		6.4	13.0	K	9.5		20.3	4.2	B	9.2	25	4.0	42.0		9.5		54.5	33.5	
9.5		30.5	22.5		9.3		7.8	31.7	B	9.4		57.5	4.0	B	9.3		38.3	4.3		9.4	43	16.8	58.0	
8.6		34.0	14.7	K	9.5		46.7	52.0	B	9.4	7	6.6	8.8		9.5		44.5	55.9		9.4		45.2	34.4	
8.6		35.5	35.5	K	8.5	49	18.0	4.1	K	9.5		41.0	42.1		8.5		50.0	11.6	B	9.4	44	7.2	33.4	
9.5	27	5.2	38.1	B	9.5		33.0	10.3		9.5	8	2.2	17.7	B	9.4	26	17.6	58.3		9.5		19.2	50.0	
9.5		49.3	54.4		9.5		36.6	35.0		8.5		14.6	25.3	B	9.5		41.0	48.4		8.7		23.7	45.0	Kb
9.5	28	27.0	33.1		7.3		59.3	55.3	K	9.5		36.6	48.0		9.5		42.9	51.1	a	9.3	45	9.9	49.1	K
9.2	29	34.7	39.9	K	9.1	50	49.0	38.0	Bb	9.3		38.5	7.6		9.4	28	33.0	20.8		9.5		33.0	59.2	
9.5		45.0	47.8		9.5		50.6	6.5		9.4		52.6	32.0		9.0		34.4	19.1	B	8.8		54.3	38.6	R
		+	−				+	−				+	−				+	−				+	−	
10pr.		28.47	2.18		10pr.		28.30	1.93		10pr.		28.14	1.65		10pr.		28.04	1.43		10pr.		27.95	1.18	

3101—3160

	16ʰ—17ʰ	+12°	
m	′ ″	′	
9.2	46 2.2	42.0	B
8.1	57.3	12.5	R
9.5	47 3.2	50.9	
9.2	10.2	33.8	B
9.3	31.5	12.8	
9.3	48 7.9	33.4	
9.0	43.9	0.3	B
8.9	52.7	35.8	K
9.4	49 3.2	26.3	
9.2	47.4	24.8	
9.0	50.0	16.8	K
9.3	50 14.0	21.5	
9.2	20.1	40.2	Bb
9.4	23.6	18.0	
9.4	51 56.1	11.9	
9.5	52 19.4	16.0	B
9.4	54.3	2.7	B
9.3	53 13.9	3.6	B
9.5	17.7	29.3	
9.0	22.8	22.8	B
9.4	30.8	55.2	B
9.2	43.8	44.4	K
9.3	54 4.1	10.6	
8.7	9.5	50.4	K
8.7	50.2	47.3	Kb
9.4	55 3.6	21.1	
9.5	11.9	56.5	
9.5	14.2	10.4	
9.1	19.8	7.8	K
9.5	35.2	11.8	
9.0	37.5	36.6	B
8.4	54.0	3.4	K
9.4	58.4	54.3	
9.5	56 9.8	11.8	
9.5	57 25.5	7.5	
9.5	39.1	7.9	
9.5	46.4	37.9	
9.3	55.2	31.7	B
9.3	58 18.8	6.8	
8.8	21.2	30.7	L
8.5	40.4	31.3	L
4.5	41.4	56.8	K
8.2	46.2	42.0	L
8.4	59 16.6	50.4	K
9.5	26.1	3.0	B
9.5	34.1	2.7	B
9.5	34.7	13.6	
8.6	37.2	47.5	K
9.4	55.5	9.9	
9.0	0 17.7	25.8	
9.3	26.5	42.0	
8.0	26.7	18.4	K
9.5	34.8	59.6	
9.0	40.2	2.7	K
9.4	42.6	27.0	B
8.3	46.7	45.0	B
9.5	1 39.7	47.5	
9.4	43.7	22.3	B
8.3	2 12.8	51.9	K
9.5	3 21.7	31.7	
	+	—	
10pr.	27.87	0.93	

3161—3220

	17ʰ	+12°		
m	′ ″	′		
7.0	4 2.2	38 9	K	
9.5	12.2	43.0		
9.0	5 16.7	16.6	Kb	
9.5	37.4	18.0		
9.1	54.1	17.2	K	
9.4	59.4	57.5	B	
9.5	6 6.5	17.5	B	
8.3	9.8	9.4	K	
9.4	12.6	19.2	B	
9.3	18 2	35.5		
9.5	31.5	3.3		n
9.5	35.7	37.5		
9.3	39.8	59.3		
9.1	7 0.2	6.0	K	
9.2	18.7	48.2		
7.0	25.3	12.6	K	
9.0	41.7	2.8	K	
9.5	8 13.4	59.0		
8.9	16.2	47.2		
8.4	43.2	5.7	L	
9.3	48.0	51.7		a
9.1	55.7	27.5		b
9.5	58.9	55.1		
9.5	9 4.7	20.7		
9.1	12.2	51.9	K	
9.4	16.7	48.5		
9.2	57.3	8.8		
9.5	58.7	14.9		
9.5	10 28.7	53.0		
9.5	11 22.0	3.0		
8.7	54.2	19.7	K	
9.0	12 12.2	40.0	K	
8.5	20.6	31.4	K	
8.6	46.7	17.6		
9.0	57.2	39.9	K	
9.5	13 19.5	39.3		
9.5	23.8	10.3	B	
9.1	14 9.2	15.9		
9.0	42.2	20.8	K	
9.5	58.7	18.4		
9.3	15 12.6	57.1	B	
8.8	14.3	36.4		
9.5	16.8	53.1		
9.5	29.0	8.0		
9.2	16 17.1	15.2		
9.3	20.5	30.2		
9.5	28.7	35.7	B	
9.5	28.7	25.2		
9.3	42.5	35.9	B	
9.4	59.7	46.3	B	
8.8	17 34.2	25.6		
9.5	40.2	3.6		
9.1	43.4	57.3	K	
9.5	45.4	54.0		
9.5	46.7	36.6		
9.4	18 16.1	55.8	B	
9.5	27.2	47.5		
9.5	19 7.2	42.7		
9.5	53.7	54.1		
8.5	20 2.5	20.6	K	
	+	—		
10pr.	27.83	0.70		

3221—3280

	17ʰ	+12°		
m	′ ″	′		
9.5	20 25.2	34.5		
9.2	28.6	59.4		
8.3	21 17.7	18.7	K	
8.5	40.7	50.5	Lb	
9.0	41.8	39.5	B	
9.0	44.2	25.5		
9.2	22 10.6	41.6	B	
9.3	13.6	39.1		
8.9	40.8	3.4		
9.5	48.5	3.6		
8.5	23 6.0	2.2	K	
8.5	9.8	9.1	L	
9.5	12.0	13.8		
6.5	37.8	3.2	K	
9.5	24 43.7	54.8		
9.1	46.0	47.5	K	
9.5	48.0	13.9		
9.3	25 0.0	15.0		
9.5	4.4	55.0		
8.0	4.7	3.6	K	
6.7	30.8	2.7	K	
9.5	51.1	11.1		
9.4	26 4.2	16.1	B	
9.5	27.0	24.2		
9.3	31.7	17.9	aB	
8.5	27 7.2	19.7	K	
9.4	16.2	40.3		
8.2	18.3	37.9	K	
9.5	46.4	54.0		
9.4	57.3	8.0		
9.5	58.6	57.2		
2.0	28 12.2	40.0	K	
8.8	24.9	16.1	B	
9.5	53.9	18.9		
9.4	55.4	39.5		
7.0	29 6.7	8.0	K	
9.0	11.7	24.6		
9.1	17.2	28.3		
9.1	39.4	42.6		
9.5	57.0	12.5		
9.0	30 13.3	19.2		
9.4	14.1	41.3		
9.5	31.8	14.8		
8.6	42.8	37.5	K	
9.4	31 21.3	5.4		
9.5	21.4	53.3		
7.5	42.9	50.2	K	
9.0	32 4.0	4.3		
9.4	30.2	16.0		
9.5	42.9	36.1		
9.0	50.9	22.1	K	
9.4	56.0	13.0		
9.5	33 6.5	55.2		
8.2	34 11.7	8.4	K	
9.3	22.4	12.3	K	
8.7	35 24.5	21.7	L	
9.3	43.5	48.8		
9.0	36 16.5	19.6	K	
9.0	58.9	10.4		
9.2	37 16.3	57.3	K	
	+	—		
10pr.	27.78	0.47		

3281—3340

	17ʰ	+12°	
m	′ ″	′	
9.5	37 32 0	23.7	
9.3	40.0	33.1	Kb
9.5	38 14.8	28.7	
9.5	41.0	22.0	
9.5	43.9	58.0	
9.3	39 0.7	17.9	
9.5	2.5	33.4	
9.0	37.5	43.3	
9.5	49.4	7.4	
9.5	40 2.1	52.2	
9.5	13.5	31.6	
9.5	19.5	24.7	
9.0	23.0	48.8	
9.5	49.0	27.5	
9.3	41 1.0	12.8	Kb
9.2	6.5	39.9	K
9.4	42 1.0	30.9	
9.1	11.2	55.0	b
9.5	58.3	58.6	
8.8	43 8.4	48.8	K
9.5	30.5	3.1	
9.3	40.5	21.3	
9.5	54.7	31.6	
9.5	57.4	10.8	
6.4	58.5	0.1	L
9.4	44 10.9	27.4	B
9.5	15.3	42.3	B
8.5	17.4	14.0	K
9.3	28.3	11.2	B
9.5	43.2	45.4	
8.6	47.7	13.8	K
9.4	45 1.3	53.1	
7.9	7.8	3.5	K
9.5	12.1	7.4	
9.0	39.1	0.3	K
8.1	41.0	0.9	K
9.5	46 23.7	3 3	
9.5	29.1	56.5	
9.0	47 3.4	6.8	
9.5	10.3	50.6	B
9.5	31.8	2.5	
9.5	43.2	16.2	
9.3	48 4.0	8.8	
8.5	9.7	42.3	L
9.5	19.8	59.7	B
9.5	31.2	3.3	
9.5	43.3	34.4	
9.5	44.7	8.7	
9.5	54.2	40.2	
9.5	49 15.8	37.5	
9.5	44.7	26.9	
9.5	47.3	36.7	
9.4	52.0	46.5	
9.5	53.6	4.3	
9.5	50 16.8	33.3	
7.3	35.8	38.9	K
9.3	45.0	6.8	
9.5	58.0	1.7	
9.0	51 1.2	22.4	
9.5	24.8	15.6	B
	+	—	
10pr.	27.77	0.22	

3341—3400

	17ʰ—18ʰ	+12°	
m	′ ″	′	
9.5	51 25.0	2.5	
8.7	43.5	58.3	K
9.4	52 4.2	4.5	
9.5	10.7	46.5	
9.4	10.7	52.3	B
8.5	18.2	27.2	Kb
8.8	19.5	39.5	K
9.5	24.3	42.3	
9.3	29.4	58.3	
9.2	31.7	35.7	K
7.7	35.4	5.9	L
9.1	44.5	58.5	
9.5	53 6.6	59.3	
9.0	11.3	49.5	K
9.5	48.2	38.2	
9.5	51.8	28.6	
9.5	54 8.1	57.4	
9.5	10.3	19.6	
9.2	33.7	7.0	K
9.5	55 3.8	55.7	
8.8	15.0	15.2	
7.8	16.6	45.8	B
9.3	16.7	4.7	
9.5	30.0	0.9	B
9.2	33.3	32.4	
8.5	56 15.2	37.2	
9.4	26.5	34.4	B
9.1	36.8	38.1	
9.1	56.2	49.8	
8.6	59.6	16.2	
9.0	57 0.0	7.1	K
9.4	9.6	32.0	B
9.4	12.2	42.6	
9.2	13.2	4.6	K
9.2	21.3	48.1	
8.7	30.2	14.8	K
9.4	52.6	39.7	B
9.4	58 8.0	34.5	B
9.0	14.2	19.0	K
9.2	32.8	59.4	b
9.2	52.3	41.9	K
7.6	56.0	0.6	L
7.5	58.4	0.6	L
9.5	59 28.3	37.9	B
9.5	31.8	41.3	B
7.8	42.7	20.6	K
9.5	54.4	10.5	
9.5	58.4	7.7	
9.5	0 4.1	58.3	
9.5	28 9	0.4	
8.9	39.8	11.5	
9.5	53.7	24.1	
9.4	57.5	58.2	
8.6	59.8	53.9	L
9.5	1 4.2	44.2	
9.5	19.0	31.4	
9.5	20.3	36.2	
9.4	22.7	58.6	
9.5	36.0	24.1	
9.4	41.7	39.2	
	+	—	
10pr.	27.76	0.05	

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	18ᵃ		+12°			18ᵃ		+12°			18ᵃ		+12°			18ᵃ		+12°			18ᵃ		+12°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	1	41.9	23.9		6.7	11	43.2	55.8	K	8.8	19	14.5	42.6		8.0	27	52.4	25.7	B	9.4	38	37.3	57.2	
8.8		51.2	43.5		9.5		51.6	9.7		9.4		14.8	33.4		9.5	28	0.1	58.3		9.5		52.9	34.3	
8.0	2	6.1	26.8	R	9.1		53.5	27.4		9.5		25.0	2.6		8.7		22.7	32.2	K	9.3	39	10.1	11.3	
7.5		42.3	23.4	L	9.5		53.6	34.2		9.1		25.4	33.9		9.5		31.0	7.7		9.5		18.0	48.3	
8.3		49.0	14.8	L	9.1	12	5.8	21.1	K	9.5		46.2	10.9		9.5		58.4	34.9		9.5		40.5	34.4	
9.3		52.8	1.0		9.5		22.1	9.5		9.4		43.5	1.2		9.3		58.6	40.7	K	9.1		43.1	34.0	K
9.3	3	15.4	58.1		6.8		22.2	8.2	K	9.5	20	0.1	9.1		9.3	29	3.8	22.6		9.2		45.0	35.7	
9.5		18.5	34.6		9.5		29.0	23.1		9.4		21.4	41.4		9.4		8.7	22.5		9.5		49.4	11.4	
9.4		31.7	19.6		7.3		31.3	28.9	K*b*	9.5		31.7	1.1		9.5		8.7	53.5		9.5		53.7	57.0	
9.5		34.7	41.7		9.5		37.3	20.0		9.4		41.7	35.3		8.5		10.3	5.8		9.5	40	2.6	33.0	
9.5		35.6	51.4		9.3		40.7	3.5		9.3		58.1	13.3		8.7		17.5	1.9		7.5		6.3	24.8	K
9.2		43.2	31.3	K	9.5		46.5	7.6		9.4		59.4	57.7		9.1		23.0	0.1		9.3		13.7	8.5	
9.5		47.1	35.2		9.5		49.9	40.1		9.1	21	13.6	14.8	R	9.5		32.8	34.4		8.0		15.9	21.8	K
9.5	4	1.0	4.0	K*b*	9.5		50.8	35.7		9.5		21.8	12.8		9.5		38.5	35.0		9.5		48.9	37.2	
8.5		1.1	39.8		9.4		59.4	9.2		9.5		22.5	20.1		9.5		41.3	39.6		8.7		56.8	17.0	K
9.5		1.6	33.7		9.0		59.8	47.8	K	9.5		27.3	47.3		9.5		45.7	9.8		9.5	41	29.3	1.3	
8.8		15.0	49.4	K	9.3	13	5.5	49.9		9.5		32.2	44.8		9.5		54.0	25.9		9.5		35.2	43.6	
9.2		50.5	46.1		9.4		15.4	23.9		8.9		42.8	53.3		7.0		54.8	52.8	K	9.3		54.8	20.2	
7.8		55.5	31.6	L	9.5		21.7	8.3		8.6		46.5	16.2		8.6		59.2	59.7	K*b*	9.3		55.4	51.7	
9.3	5	21.5	15.8		9.4		29.3	0.7		9.5		48.0	20.1		9.5	30	7.2	30.8		9.5	42	18.4	51.2	
9.5		48.9	41.0		8.7		30.1	55.1	K	9.3		56.2	44.1		8.7		15.2	16.4	K	8.7		25.8	35.2	
7.1		53.1	21.8	K	9.5		37.3	47.0		9.5		56.8	8.0		9.5		16.9	8.7		9.5		39.9	18.4	
9.4	6	1.7	18.9		9.5		49.3	15.9		9.2		59.2	43.6		9.5		33.3	40.5		9.0		40.3	46.2	
9.5		7.8	33.3		9.5	14	8.1	19.5		9.5	22	13.5	16.3		8.2		35.3	9.2	K	9.2		40.6	43.2	
9.5		12.7	17.0		9.5		12.5	28.7		9.5		23.5	43.1		9.5		38.5	12.4		9.1		43.2	5.5	
9.5		18.7	28.1		9.3		32.6	14.2	K	7.7		47.6	21.8	*B*	9.5		47.9	37.7		9.2		44.3	18.7	
9.4		28.6	11.1		9.0		46.9	30.9		9.5		49.9	35.3		9.5		55.1	10.9		9.3		46.9	31.4	
9.3		41.2	14.9		9.1		48.2	53.1		8.7		57.2	50.8	K	9.5	31	32.4	46.4		9.0		48.7	33.3	
9.5		49.8	25.7		9.2		59.3	21.3		9.5	23	6.6	16.5		9.1		42.9	12.4		9.3		52.4	27.9	
9.5		53.4	19.2		9.5	15	0.5	28.8		9.4		17.7	0.8		9.0		56.1	1.6		9.3		54.3	41.3	
9.4	7	35.9	2.0		9.1		2.8	4.4	R	9.5		24.9	9.0		9.5	32	12.6	39.4		9.1	43	0.0	21.5	
9.3		46.0	16.9		9.4		27.4	10.5		9.4		25.4	59.0		9.4		39.7	27.9		9.5		2.7	27.6	
9.5	8	5.3	36.2		9.5		28.6	15.9		9.5		29.8	31.7		9.0	33	2.4	46.3		9.5		14.6	26.6	
9.5		13.8	18.6		9.5		46.1	57.0		9.3		44.4	23.1		7.9	34	4.8	5.7	K	8.5		17.0	26.3	
8.7		49.4	20.7		9.5		54.6	18.2		9.3		44.6	34.2		9.5		5.0	56.0		9.5		33.3	18.3	
8.2		53.3	59.1	K	8.6	16	2.7	27.4		9.3		51.4	10.2		8.4		16.4	52.9	K	8.5		36.3	17.9	
9.3	9	7.1	55.4		9.5		5.6	14.2		*var*		55.6	31.0	K	9.2		18.1	55.8		8.9		43.6	24.2	
9.4		34.2	14.3		9.3		10.7	37.6		9.5		57.8	37.5		7.6		23.3	4.9	K	9.5		48.1	8.9	
9.2		45.8	54.0		8.7		14.5	1.3	L	9.5	24	3.6	26.0		6.5		43.3	6.6	K	9.5		50.0	57.5	
9.3		55.3	20.3		9.5		21.2	56.9		9.5		4.0	0.1		9.0		44.8	38.5		9.5	44	1.3	23.7	
9.3		56.4	14.0		9.4		22.8	4.6		9.1		13.4	32.8	K	9.4		48.1	20.6		9.5		15.8	25.6	
9.3		57.8	2.8		8.9		23.4	25.8	R	9.5		25.8	26.2		7.7		48.7	50.5	K*b*	8.6		19.6	0.2	
9.5	10	7.3	37.1		9.5		31.0	5.6		9.4		26.3	18.2		6.7	35	4.7	7.3	K	9.4		21.6	7.9	
9.3		7.7	11.2		9.5		32.0	56.9		9.5		28.4	30.5		9.4		47.8	0.9		9.2		29.1	48.6	
9.5		12.1	54.9		9.5		39.6	4.7		9.3		54.9	0.1		9.5	36	12.0	40.1		9.5		38.8	31.6	
6.9		15.1	1.4	L	9.5	17	14.9	6.7		9.3		56.8	35.1		9.5		18.8	56.5		9.5		39.0	45.2	
9.5		30.2	0.7		9.5		15.1	43.2		9.1	25	8.4	3.1		8.9		21.9	44.8		9.3		42.1	54.6	
9.3		41.1	22.7		9.5		16.0	33.4		8.6		25.3	15.4	K	9.2		43.5	29.0		9.5		56.8	20.8	
9.0		46.4	9.2	K	9.5		21.3	18.2		9.4		34.3	19.0		9.0		46.6	25.2		9.5	45	0.3	0.1	
9.5		51.7	15.4		9.3		45.8	17.7		8.6		42.6	10.5	K	9.0		47.1	25.5		9.4		7.4	6.1	
9.3		52.5	30.3		8.4		52.9	58.6	K	9.1		59.0	19.9		6.7	37	11.0	1.7	L	8.6		16.6	29.1	L
9.5		55.0	18.3		9.3	18	1.6	44.0		8.9	26	2.2	10.7	K	9.3		15.7	16.6		9.3		25.3	0.0	*a*
9.4		58.2	53.3		9.4		5.7	28.1		8.9		13.3	34.9		9.3		15.9	7.9		8.8		28.0	52.3	
9.1	11	9.0	31.9	*b*	9.5		14.7	53.1		9.5		28.9	31.2		8.8		19.3	36.1		8.0		34.3	18.6	L
9.5		11.3	54.6		9.4		18.6	48.3		9.5		48.7	54.1		9.5		37.7	26.7		9.5	46	2.0	20.3	
7.5		17.8	9.3	K	9.4		33.5	26.4		9.5	27	8.8	26.3		9.5		40.4	12.2		8.6		2.1	24.0	K
9.5		21.2	33.7		9.4		38.2	26.3		9.5		18.2	42.1		9.5		52.1	16.8		9.5		11.8	20.2	
9.5		30.3	48.8		8.8		47.8	23.3	K	9.5		19.4	43.1		9.5	38	30.0	43.8		9.1		12.0	36.9	
9.3		37.2	57.6		9.5		52.1	3.9		9.0		22.4	24.2		9.5		31.0	45.3		9.5		44.7	58.3	
9.0		38.8	27.2		9.4	19	9.4	33.0		9.4		40.6	41.3	*a*	9.4		35.8	5.8		9.4		45.2	9.9	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*27.76*	*0.11*		*10 pr.*		*27.77*	*0.22*		*10 pr.*		*27.77*	*0.34*		*10 pr.*		*27.78*	*0.47*		*10 pr.*		*27.81*	*0.62*	

3701—3760

	18h		+12°	
m		″	′	
8.0	46	53.9	51.6	K
9.5		54.0	17.7	
9.2		56.5	39.9	
9.4		58.6	30.4	
9.5		58.8	17.1	
9.4	47	2.0	16.7	
7.8		2.1	49.1	K
9.5		14.4	7.9	
9.5		18.3	1.7	
9.4		25.3	37.5	
8.0		28.6	52.6	K
9.4		40.3	38.2	
9.5		47.9	38.8	
9.5	48	7.3	49.6	
9.5		20.4	34.6	
9.4		22.8	35.0	
9.4		23.6	8.8	
9.1		29.5	57.7	K
9.3		37.6	6.6	
9.5		49.9	5.7	
9.5		56.3	22.3	
8.6	49	1.4	43.7	K
9.3		3.2	43.8	
9.5		7.7	2.4	
9.5		20.4	28.6	
9.5		30.6	45.7	
9.5		31.9	9.7	
9.5		41.2	3.1	
9.5	50	13.0	50.7	
9.5		17.8	6.7	
9.5		34.0	37.8	
9.5		41.0	47.2	
9.5	51	6.5	30.0	
9.2		11.2	6.6	
9.4		14.1	42.5	
9.5		18.0	6.7	
9.3		21.4	53.6	
9.4		21.4	50.4	
9.5		26.2	59.4	
9.3		29.7	35.4	
9.0		47.5	29.0	
8.4		55.0	30.1	K
9.5		59.2	6.3	
9.4	52	24.0	57.0	
9.5		24.6	43.0	
9.5		28.5	53.2	
9.4		49.6	42.9	
9.5	53	1.5	22.6	
7.5		8.8	6.6	K
7.0		16.1	41.6	R
8.8		31.1	50.8	
8.5		38.9	52.5	
9.3		46.4	55.7	
8.0		49.0	1.8	K
9.4		51.8	40.7	
8.8		54.1	25.7	
9.2		56.9	54.2	
9.3		57.0	6.5	
9.5		58.2	47.4	
9.3	54	6.8	7.2	
10pr.		+ 27.83	+ 0.73	

3761—3820

	18h—19h		+12°	
m		″	′	
9.5	54	7.9	43.1	
9.3		11.3	32.7	
9.3		11.8	4.6	
9.5		23.3	59.9	
9.3		30.0	47.8	
9.4		31.2	50.9	
8.1		36.8	25.3	K
8.5		43.4	49.9	K
8.5		54.4	25.1	K
6.9	55	4.8	20.4	K
9.0		16.2	13.8	Kb
9.5		19.7	35.4	
9.5		24.2	14.4	
9.0		40.4	20.9	
9.4		56.1	39.4	
9.5	56	7.8	32.4	
9.2		10.0	43.2	
9.2		15.1	38.3	
9.0		18.2	24.7	K
8.7		24.5	2.8	K
8.8		25.9	27.6	K
9.5		58.9	50.0	
9.5	57	3.2	20.9	
8.2		4.2	32.4	K
9.5		13.3	47.4	
9.3		25.3	8.8	
8.8		30.9	33.1	K
8.6		31.8	42.5	K
9.1		32.3	11.9	
8.1		40.5	47.4	K
9.5		54.9	40.6	
9.5		57.0	43.9	
9.5	58	4.2	2.3	
9.5		17.2	49.2	
9.5		28.4	30.7	
9.1		29.4	23.7	K
9.3		31.7	0.5	a
9.5		34.4	26.0	
9.5		34.9	21.0	
9.2		35.9	21.9	
9.5		49.0	37.8	
9.5	59	2.7	7.4	
9.5		7.9	59.5	
9.5		22.2	27.9	
9.5		23.7	42.6	
9.5		44.6	23.2	a
9.5		54.2	52.9	
9.5	0	3.1	13.0	
9.0		15.5	23.1	
9.4		30.2	19.3	
8.2		40.8	24.4	B
9.3		47.5	37.0	
8.6	1	2.1	56.1	K
9.5		2.6	56.4	
9.5		2.6	28.6	
9.5		9.3	52.5	
9.5		11.8	45.3	
7.5		29.0	1.5	K
6.8		42.0	52.6	K
8.8		56.7	57.8	K
10pr.		+ 27.85	+ 0.83	

3821—3880

	19h		+12°	
m		″	′	
9.4	2	9.9	34.4	
9.4		21.0	41.0	
9.5		36.6	41.4	
9.5		51.5	33.8	
9.5		54.1	6.6	
9.5		57.9	29.8	
9.4		58.5	52.0	
9.4	3	6.0	57.0	
9.4		9.1	34.4	
9.3		15.3	18.1	
9.3		16.4	57.2	
8.9		18.6	14.5	K
9.5		20.0	18.3	
8.6		40.8	5.6	K
9.4		50.7	21.6	
9.5	4	3.0	58.8	
9.5		15.0	3.3	
9.5		19.5	31.4	
9.0		32.6	7.8	
9.2		37.0	53.1	
9.3		42.6	8.3	a
9.5		43.6	34.5	
9.5		47.0	33.1	
9.5		58.7	38.1	
9.0	5	3.6	38.0	
9.5		10.5	50.4	
9.5		31.8	51.2	
9.4		39.3	2.1	
8.7		46.9	28.2	
9.5		51.4	44.6	
8.9		52.7	38.6	
9.4	6	0.3	45.1	
9.5		21.3	25.8	
9.4		24.2	19.8	
9.4		29.7	37.8	
9.3		32.5	55.3	
9.3	7	29.0	55.7	
9.1	8	8.9	13.7	b
9.5		59.0	9.6	
9.4		59.6	46.1	
7.8	9	14.8	51.7	K
9.5		44.2	10.2	
8.7		48.1	53.0	
9.5	10	9.5	47.5	
9.5		13.3	24.6	
9.5		14.6	35.9	
8.4		16.0	52.3	K
9.5		21.9	0.6	
8.9	11	15.1	12.6	
9.5		15.2	15.2	
9.4		49.5	41.7	
9.5		51.5	52.7	
9.5	12	1.3	1.1	
8.0		2.7	48.6	B
9.5		6.0	1.3	
9.0		17.5	38.8	
9.5		28.1	12.8	
9.5		44.9	32.0	
5.5		52.7	6.6	Kb
8.8		54.1	5.3	K
10pr.		+ 27.88	+ 0.95	

3881—3940

	19h		+12°	
m		″	′	
7.7	12	59.3	38.1	B
9.5	13	8.3	40.1	
9.5		11.8	29.3	
9.4		21.5	31.7	
9.4		25.9	8.2	
9.5		31.8	7.8	
9.2		40.3	32.9	
9.5		44.6	36.5	
8.8		49.0	50.4	K
9.5		49.6	15.3	
*				
9.4	14	53.5	19.8	
9.5	15	19.4	17.0	
9.5		54.0	58.6	
7.9	16	3.2	38.8	K
9.5		23.7	42.3	
7.1	17	41.0	0.5	K
9.4		48.6	39.9	
9.3		52.4	59.1	
9.2		53.7	53.6	
9.1	18	12.9	42.9	b
9.4		14.9	24.7	
9.2		40.0	28.6	
9.4		51.5	34.9	
7.8	19	21.7	18.7	B
9.5		29.5	45.0	
9.5		33.3	58.8	
6.0		40.2	44.7	K
9.5		44.1	45.9	
9.1		58.1	34.1	
9.0	20	3.6	34.7	K
9.5		45.6	56.7	
9.1		55.8	21.6	
7.9		56.4	12.0	K
9.4		56.8	9.3	
9.4	21	23.1	38.1	B
9.5		29.8	42.6	
8.8		30.7	14.5	K
8.7		30.8	25.3	
9.5		34.6	9.1	
9.3		37.5	3.1	
9.5	22	4.0	35.1	
9.5		7.9	1.6	
7.8		14.0	10.5	K
9.5		15.8	37.4	
7.2		16.7	33.7	B
8.0		28.5	53.4	K
9.3		40.4	16.6	
9.1		47.3	33.8	
7.5		50.1	6.6	K
9.5	23	3.2	30.3	
9.3		9.2	23.2	
7.7		10.4	51.0	L
9.5		20.7	56.9	
9.1		34.8	49.3	
9.5		37.5	7.7	
9.5		39.9	23.4	
9.5		40.7	25.8	
9.5		44.2	23.1	
9.2		45.6	1.5	
7.5		49.2	31.3	L
10pr.		+ 27.93	+ 1.15	

3941—4000

	19h		+12°	
m		″	′	
9.5	23	56.3	9.8	
8.9		59.4	44.6	
9.2	24	10.9	58.3	
8.8		44.9	28.2	
8.5		48.3	51.3	
9.5		50.0	1.7	
9.5		54.3	9.2	
9.0		56.1	49.6	
9.5	25	19.7	22.4	
9.3		33.4	35.0	
9.3		34.1	19.4	
9.4		37.4	51.0	
9.2		39.3	49.7	
9.5		42.1	14.4	
9.5		50.7	37.7	
9.3	26	3.0	55.5	
8.8		6.4	31.7	
9.4		12.6	32.9	
9.2		31.1	12.8	K
9.2		47.7	53.6	
9.1	27	11.2	1.6	b
9.5		12 3	10.3	
9.4		17.6	21.5	
8.7		17.8	20.2	K
9.5		17.8	51.5	
9.5		31.8	18.3	
9.5		42.5	58.6	
8.9		45.0	32.2	K
9.5		52.5	29.8	
9.2		53.1	9.4	
9.5		54.4	35.5	
9.3		58.4	15.3	
8.5	28	8.0	46.0	K
9.2		11.4	17.6	
9.5		12.5	18.2	
9.2		14.0	9.1	
8.1		44.8	55.3	Lb
9.5		52.9	47.9	
9.4	29	4.1	49.8	
9.5		39.2	51.0	
9.4		42.6	39.2	
9.2	30	3.4	37.5	
9.5		10.6	13.7	
9.2		12.7	31.9	
9.5		16.4	48.2	
9.5		21.5	56.2	
8.0		32.9	48.4	L
9.5		37.1	6.9	
9.3		47.4	51.8	
8.0		50.1	22.3	L
9.4		50.2	34.8	
9.3		54.5	24.9	
9.4		55.0	43.5	
9.4		57.0	20.8	
8.2	31	3.5	37.3	B
8.9		6.3	34.0	
8.2		14.7	17.4	L
9.0		20.0	5.2	
9.0		24.4	43.6	
9.5		35.1	4.4	
10pr.		+ 27.97	+ 1.25	

3890 a

8.3	14	46.5	59.4	K

4001—4060					4061—4120					4121—4180					4181—4240					4241—4300				
	19h		+12°			19h		+12°			19h		+12°			19h—20h		+12°			20h		+12°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
8.1	31	45.3	2.0	K	8.6	37	51.3	55.0	K	9.3	46	32.6	38.9		9.4	53	24.6	38.5		8.5	3	28.3	18.5	L
8.9		45.7	2.6	K	9.5		55.9	3.4		8.1		36.7	52.6	B	9.5		27.2	25.3		9.5		42.9	47.4	
9.5		48.8	25.7		9.2	38	11.5	42.2	a	9.5		44.1	40.7		9.5		31.1	8.2		9.5		49.5	38.0	
9.5		52.0	2.8		8.9		18.4	42.7	K	8.5		53.7	22.5	K	7.8		34.0	42.3	L	9.5		50.5	42.2	
9.4	32	3.8	20.5		9.5		24.7	14.5		9.4	47	3.2	47.2		9.5		40.7	39.3		9.5		54.1	57.0	
9.5		3.9	5.7		8.8	39	22.2	18.6		9.1		5.2	15.6		9.5		43.8	27.9		9.5		56.3	0.0	
9.5		4.3	28.3		8.9		24.8	47.5	K	9.5		8.0	44.3		9.3		45.2	53.5		9.5		56.8	3.5	
9.0		9.0	24.3		8.5		26.0	8.7		9.5		9.9	0.3		8.8		48.0	46.9		9.5	4	6.3	14.7	
9.5		12.8	4.6		9.3		28.9	15.5		8.6		16.8	53.6		7.2	54	5.3	59.2	L	9.4		9.5	40.5	B
9.5		28.1	24.3		9.5		33.1	47.3		9.5		46.2	40.6		9.5		11.3	16.9	B	9.3		20.6	50.9	Bb
9.3		38.6	56.2		9.5		39.8	50.7		9.5		47.9	54.8		9.1		42.4	40.3		9.4		21.3	56.9	
9.0		43.3	12.4		9.5		41.7	53.3		9.3		51.7	20.2		9.5		58.7	49.5		9.5		39.9	43.0	
9.5		44.4	47.2		8.7		44.5	32.9		8.8		56.6	21.8	K	9.5	55	3.0	10.6		9.4		41.1	55.6	
9.5		45.2	58.4		8.4		49.6	27.4	K	9.5	48	5.0	23.3		9.1		6.8	28.1	b	9.2		41.1	28 6	
8.7		52.9	51.0	K	9.4		57.1	51.8		9.5		9.4	49.5		9.5		34.0	17.3		*9.4	5	18.7	38.5	B
9.4	33	11.5	50.2		9.5	40	11.3	10.2		9.5		16.7	33.3		8.1		49.4	47.3	B	*9.0		24.1	0.6	K
8.7		19.3	44.3		9.5		13.8	54.5		9.4		18.1	41.4		9.0	56	6.0	16.4		*9.5	6	31.4	47.1	
9.5		29.8	2.4		8.9		37.1	1.5		9.5		19.2	37.5		9.0		10.0	14.0		9.1		32.9	31.6	a
9.5		45.9	9.0		8.6	41	11.4	15.8		8.2		20.0	48.7	K	8.8		15.3	38.5		9.5		42.8	42.9	
9.0		56.5	22.1		8.9		20.0	56.0		9.4		35.9	6.9		9.0		16.4	50.5		9.1		46.9	14.7	a
9.1		56.6	59.6		9.5		25.1	30.0		9.5		49.7	51.0		9.4		31.5	42.0		9.0		50.4	35.4	K
8.5		58.3	12.7		9.5		28.5	11.0		9.5		50.5	59.2		9.2		33.6	55.9		9.0	7	12.8	14.8	
9.5	34	1.5	2.5		9.5		30.3	22.5		9.4		54.2	47.0		9.4		45.0	38.1	a	9.5		46.4	18.8	
9.4		15.6	45.0		9.5		39.5	9.0		9.5	49	30.7	21.5		9.5		54.7	51.2		8.5	8	1.6	47.3	K
9.2		17.0	34.5		7.7		40.4	1.6	K	9.5		38.4	12.3		9.3	57	4.7	8 9		7.8		13.2	40.4	K
9.4		21.2	4.8		9.2		40.6	33.7		8.5		55.5	3.2	B	9.2		5.0	14.4		9.5		19.7	15.9	
7.0		22.7	50.2	B	9.5		42.6	12.1		9.5		58.3	32.1	a	9.1		21.9	44.8	Bb	9.1		21.1	22.8	
9.2		31.1	41.8		9.4		57.8	8.1		9.5	50	5.2	59.8		9.2		25.4	23.3	K	9.2		34.5	38.0	
9.3		39.5	59.1		9.3	42	9.0	51.8		9.3		10.6	37.0		7.3		52 0	36.9	K	9.2		54.6	52.0	
9.2		47.2	9.2		9.5		12.8	38.2		9.1		18.7	6.9	aB	9.5	58	29.0	51.9		9.5		57.0	28.2	
9.5		55.3	18.8		9.5		40.9	41.4		9.0		19.9	32.5		9.3		44.0	18.0		9.1		57.8	34.5	
9.5	35	3.4	17.2		9.5		43.6	56.9		9.5		39.2	50.5		8.5		46.7	42.2	K	9.5	9	4.9	13.6	
9.5		5.3	53.8		9.3		44.0	20.8		8.9		43.9	5.0		9.0		54.9	9.1		8.9		24.7	30.4	
8.5		10.3	54.5		8.8		44.1	30.0		9.5		51.2	16.6		9.5	59	4.0	45.4		9.3		32.5	42.4	B
8.8		10.9	33.6		9.2		49.2	19.7		9.1	51	1.4	30.1		9.3		6.4	16.6		9.5		58.2	24.2	
9.3		18.9	20.1		9.5	43	11.3	42.2		8.9		6.3	26.4	B	9.4		19.1	16.3		9.5	10	2.9	46.4	
9.5		21.5	33.6		9.5		11.5	58.3		9.5		14.1	32.2		9.5		22.4	6.7		9.5		34.6	29.3	a
9.3		22.7	48.8		9.3		21.0	21.7		9.5		14.8	24.9	B	9.4		24.5	45.1		9.4	11	2.1	56.2	B
9 5		28.1	41 5		9.5		35.8	14.2		9.2		32.9	41.8	aB	9.3		29.3	33.6	a	9.3		30.2	10.5	
8.7		34.4	4.4		9.4		36.0	23.6		9.0		36.4	41.3		9.3		31.9	30.9	aB	9.3		31.3	22.6	
9.5		35.1	7.6		9.5		45.2	53.8		9.5		36.5	23.9	B	9.4		37.4	39.2		9.2		37.8	59.6	K
8.8		35.5	52.7		9.5		50.7	51.9		9.5		44.4	23.7	B	9.5		38.0	48.0		8.8		45.7	31.9	
9.5		41.3	58.9		9.5		51.4	9.5		8.3		45.7	38.1	B	9.1		41.8	28.1	B	8.9		48.7	50.0	K
8.0		45.8	26.7	B	9.5		53.1	24.9		9.1		46.5	7.2		8.3		42.2	2.0		9.4		51.9	43.9	B
9.4		58.1	32.5	a	9.5		53.2	59.0		9.1		48.1	11.1		7.0		45.6	17.2	L	9.5		54.7	45.4	
9.3	36	6.1	4.0		9.5		58.4	8.0		9.5		54.9	27.7		7.4		55.3	31.4	B	9.0		58.1	27.0	
9.5		6.3	31.7		9.5	44	3.9	56.0		9.5	52	1.0	32.2		9.4	0	4.8	22.0		9.5	12	10.8	7.7	
9.5		14.1	29.0		9.0		4.5	42.1		9.5		4.5	31.7		8.8		14.8	31.2		9.2		13.0	3 6	
9.5		17.7	1.4		9.5		6.8	37.2		9.5		15.9	59.3		7.2		15.2	54.7	K	5.6		40.7	47.5	K
9.2		17.9	25.5		9.5		8.7	23.1		9.5		18.6	53.1		9.2		25.3	36.1	K	9.2		44.5	41.8	B
9.5		32.5	17.3		8.9		11 5	41.5		9.3		19.0	8.2		9.2		59.6	59.7		8.0		48.2	32.1	K
9.5		36.5	29.0		9.3		44.8	52.5		9.4		21.5	29.5		9.4	1	7.3	26.2		9.2		56.4	59.1	B
9.5		41.7	23.2		9.2	45	8.1	0.9		9.4		29.1	18.4		9.1		9.4	46.8		9.3	13	11.1	9.7	
9.5		53.4	25.1		9.5		13.5	41.0		9.4		38.7	56.6		9.5		47.8	12.7		8.7		25.1	13.1	L
9.5	37	10.6	26.9		9.5		16.3	12.5		9.5		56.7	3.5		9.3	2	1.5	42.5	B	9.0		29.0	38.0	K
7.7		18.6	1.9	K	9.1		48.0	51.6	b	9.4		59.0	22.3		8.0		13.7	36.4	L	9.1		47.2	47.1	
9.5		45.4	11.6		9.4		52.0	32.8		9.5	53	4.3	52.2		9.5		26.7	31.4		9.1		49.7	21.4	K
9.5		49.6	16.9		9.4	46	7.6	30.8		9.3		9.6	53.7		9.5		35.3	38.6		9.3	14	1.7	59.9	aB
6.0		49.6	57.6	Kb	9.5		8.9	14.4		9.3		12.3	45.3	a	8.9		52.2	23.9	B	7.7		21.6	23.4	K
7.4		51.2	53.1	K	8.9		31.7	1.9	K	9.4		15.6	42.1		9.2	3	17.3	38.6	B	7.8		37.5	58.3	B
10pr.		+ 28.00	+ 1.34		10pr.		+ 28.04	+ 1.44		10pr.		+ 28.09	+ 1.54		10pr.		+ 28.14	+ 1.65		10pr.		+ 28.21	+ 1.79	

4254a			
9.5	b	8.3	28.1
4256a			
var	5	55.4	33.8

m	20ᵐ	+12°		m	20ᵐ	+12°		m	20ᵐ	+12°		m	20ᵐ	+12°		m	20ᵐ–21ᵐ	+12°	
	43°1–43°6				43°6–44°2				44°2–44°8				44°8–45°4				45°4–46°0		
9.1	14′ 43.4	35.4	B	9.5	24′ 24.2	34.7		8.0	33′ 3.1	48.9	Kb	9.4	44′ 26.1	25.9		8.5	58′ 5.4	8.6	K
9.5	52.6	16.5		9.1	29.2	43.5	B	9.0	28.4	2.7		9.5	44.4	57.4		9.5	19.4	23.0	
9.5	15 4.2	23.4		9.5	36.2	7.5		9.3	29.9	54.8		9.4	45 7.6	52.7		9.5	28.0	31.5	
9.5	26.7	29.4		9.1	39.0	54.9	K	9.4	31.1	34.0		9.5	7.9	20.0		9.0	59 17.4	36.5	K
9.5	26.8	17.7		8.5	39.7	58.2	K	9.5	38.3	10.6		9.5	10.0	0.9	B	8.2	30.7	32.7	K
9.5	32.4	1.0		9.1	40.2	47.3		9.5	34 11.7	40.0		8.6	39.2	38.2	K	9.2	31.9	35.8	K
8.4	54.2	53.2	L	9.5	45.7	8.9		9.2	14.6	31.0	a	8.5	46 20.6	15.6	K	8.8	44.0	29.4	K
8.7	16 0.5	52.8	Lb	9.4	25 23.0	10.1		8.3	18.8	8.7	K	9.0	31.1	31.4		9.3	0 38.9	40.3	K
9.1	20.1	37.9		9.5	33.6	4.5		9.3	30.8	9.1	B	9.4	31.8	21.0	B	8.7	59.9	6.1	L
9.5	24.2	48.2		9.5	51.1	42.0		9.2	46.2	13.3		8.5	34.0	1.4	K	8.7	1 8.8	34.8	K
9.0	26.4	21.0		9.5	59.4	1.0		7.7	52.8	0.7	K	9.5	34.2	5.7		9.5	14.4	21.9	
9.5	40.8	48.2		8.6	26 12.7	14.2	K	8.1	35 2.3	28.2	B	9.5	47 1.6	20.7		8.0	20.7	8.9	L
9.1	46.6	12.7		9.4	30.3	31.0		9.5	10.7	5.7		9.5	7.2	55.3		8.3	28.9	50.5	K
9.4	17 0.2	33.8		9.5	36.8	12.8		9.3	12.2	53.2		8.5	9.2	33.4	S	9.5	54.4	11.8	
9.2	7.7	27.2	B	9.1	37.7	8.7		8.8	18.9	52.1		9.5	30.7	36.8		8.8	59.8	46.8	K
9.5	21.0	29.7		8.8	42.2	54.1		9.2	22.3	32.6		9.5	49.0	46.9	B	9.4	2 0.8	43.9	
9.5	28.3	54.3		9.4	27 4.6	21.0		7.4	27.8	6.9	K	9.4	51.4	56.9	B	9.4	2.2	45.2	
8.3	32.9	32.0	K	6.0	5.4	32.7	Lb	9.5	32.2	44.5		9.5	48 5.6	40.4		9.5	3 11.0	43.4	
9.4	51.1	37.2	Kb	9.4	8.9	30.6		8.7	39.0	16.0		8.7	8.1	36.5		9.3	14.4	23.3	
9.2	18 7.2	41.3		9.4	10.0	56.0		8.1	40.7	13.5	K	8.8	23.2	17.0		9.5	24.0	43.0	
8.7	7.8	6.0		9.4	10.9	24.0		8.1	42.7	13.5	K	5.7	43.3	1.6	K	9.5	33.9	42.7	
7.7	13.2	55.8	K	8.5	22.9	56.2		9.0	36 1.1	27.6		9.0	49 2.0	4.1	K	9.3	45.9	51.8	
9.1	47.4	4.2		7.2	59.8	59.0	K	9.4	25.8	20.6	B	8.8	9.0	42.6		9.3	50.9	10.8	
9.5	19 29.7	22.7		9.4	28 2.3	10.8		9.4	36.2	12.5		9.1	18.0	8.3	K	9.1	55.0	12.7	B
9.3	37.2	12.8	B	9.4	6.7	12.1	B	9.5	36.8	3.6		9.5	49.4	35.8		9.4	4 2.0	12.9	
9.5	42.6	27.9		9.4	15.2	23.3	B	9.5	50.6	45.5		9.3	49.5	24.5	B	9.5	11.9	2.8	
9.3	43.7	33.4		9.5	18.3	20.2	B	9.3	37 5.9	2.9		8.0	51.3	27.5	S	9.5	37.9	33.6	
9.4	55.7	54.9		9.5	18.6	12.9		9.4	24.4	4.1	B	9.1	57.5	4.5	K	9.4	38.6	15.1	B
9.3	56.0	55.5		8.5	24.2	1.2		9.2	32.2	52.5		9.0	50 0.0	11.3	K	7.6	51.4	22.2	K
9.4	56.3	7.2		8.8	33.2	32.1	K	9.5	46.5	54.4		9.4	0.8	7.3	B	9.0	5 11.9	38.9	
8.5	59.7	0.4	K	9.3	41.1	16.2	B	8.8	38 4.2	25.0		9.5	6.9	39.6		9.1	23.2	59.5	b
9.5	20 4.3	39.3		9.0	29 6.0	15.4		8.5	7.6	12.9	K	9.1	36.5	34.6		9.0	57.9	12.8	
9.5	12.7	59.4		8.5	37.6	15.9		8.3	9.7	10.8	K	9.5	51 26.0	18.3		*9.4	6 5.9	28.9	
9.5	14.3	32.1		9.5	53.7	55.4		9.5	41.6	53.7		9.5	41.4	41.0		*9.4	39.7	0.4	B
9.5	15.6	44.8		9.2	58.7	27.3	B	9.5	44.4	49.6		9.5	52 18.9	45.2	b	9.0	7 4.4	38.2	K
9.3	21.7	45.8		9.1	30 16.5	56.2	a	9.4	39 16.7	43.3		9.5	40.0	22.5		8.9	4.9	30.6	K
8.5	25.2	51.6		8.3	19.7	20.8		8.0	37.2	6.3	K	9.1	53 12.4	8.7	b	8.5	14.4	38.2	
8.5	26.4	27.2	B	8.5	22.9	47.2		9.2	45.5	34.5	aB	8.5	52.9	25.3	K	8.1	15.4	24.0	K
9.5	26.4	26.3		9.2	31.2	26.6		9.5	48.6	15.0		9.1	54 3.0	26.8	K	9.5	22.9	16.0	
9.0	27.1	37.6		9.4	32.0	15.2		9.2	55.0	34.4	aB	9.5	20.8	59.0		9.5	31.9	26.1	
8.0	38.9	20.0	B	9.2	35.8	18.0	B	9.5	40 14.6	46.5		9.5	40.0	35.7		9.1	43.9	15.0	B
9.4	49.7	2.8		8.8	42.1	33.1		9.5	27.1	6.7		9.4	41.6	36.8	B	9.5	50.0	21.1	
9.3	21 8.7	15.7	B	9.1	58.5	56.4	a	9.5	33.9	59.2		9.5	44.3	34.8		8.8	8 1.4	38.2	K
8.5	11.6	18.6		9.2	31 5.2	54.1		9.0	43.8	34.0		9.5	50.4	22.2		9.0	7.9	37.5	K
9.5	40.0	6.1		7.5	8.0	37.4	L	7.3	45.0	27.5	Kb	8.2	55 5.4	45.9	L	9.0	10.4	43.5	
9.5	53.0	1.1		8.5	16.9	25.8		8.8	41 7.0	6.6		9.0	25.0	9.3		9.5	42.4	49.3	K
9.2	57.1	27.1		9.4	23.7	44.7		9.5	32.2	40.7		9.0	28.6	4.7		9.5	9 26.7	58.5	
7.3	22 18.1	12.3	K	8.0	29.1	49.9	K	9.5	59.1	15.6		9.5	32.4	29.9		8.9	10 55.8	55.8	
9.5	41.4	27.5		9.0	33.1	38.1		9.5	42 0.6	45.8		8.7	33.8	1.4		9.5	11 11.4	46.3	
9.1	44.8	30.2	B	9.1	49.1	4.0	B	9.5	34.2	18.0		9.3	44.8	18.6	Kb	8.9	13.4	3.8	K
9.3	45.1	56.4		5.5	53.2	49.5	K	8.7	38.2	28.6		9.5	52.9	26.4		9.2	30.2	8.9	K
8.7	58.1	30.7	K	9.4	32 15.5	57.3		5.5	43.2	1.2	Lb	8.3	56 1.4	23.0	K	8.3	12 3.8	58.1	Kb
8.3	23 14.6	26.9	K	9.5	20.6	36.3		9.2	54.7	48.5		9.5	12.3	6.4		9.5	18.4	44.5	a
9.3	35.6	5.2		9.3	40.2	57.6		8.5	59.1	21.2		9.4	16.7	30.9	B	9.1	24.7	39.0	B
9.2	37.2	9.3		8.0	40.4	49.3	K	9.2	43 0.7	48.2		9.4	23.4	2.8		9.5	37.1	2.6	
9.1	40.7	44.3		9.4	54.8	58.3		9.5	6.1	11.5		9.2	24.4	25.3	a	9.0	46.0	30.8	K
9.4	49.7	20.7	B	9.0	56.7	20.3		7.5	18.6	47.2	B	9.2	34.4	25.0	K	9.5	49.8	57.2	
8.3	49.9	49.2	K	8.5	59.4	39.2		8.5	54.2	2.1	K	8.3	57 13.7	6.6	K	9.2	51.9	31.3	
9.5	55.5	53.6	B	7.2	33 2.2	55.9	K	9.5	44 9.6	57.5		9.4	25.9	38.5		9.2	55.9	38.9	
9.5	24 16.1	18.6		9.3	2.6	6.4	B	9.0	12.7	32.0	Kb	9.3	30.1	12.3	B	7.3	13 7.1	22.2	
10pr.	+ 28.29	+ 1.92		10pr.	+ 28.36	+ 2.01		10pr.	+ 28.43	+ 2.12		10pr.	+ 28.53	+ 2.26		10pr.	+ 28.67	+ 2.41	

4573ᵃ var | 6 | 15.0 | 12.4 | a

4601—4660					4661—4720					4721—4780					4781—4840					4841—4900				
	21ᵐ		+12°			21ᵐ		+12°			21ᵐ–22ᵐ		+12°			22ᵐ		+12°			22ᵐ		+12°	
m	h	′ ″	′		m	h	′ ″	′		m	h	′ ″	′		m	h	′ ″	′		m	h	′ ″	′	
9.0	13	13.0	10.9		8.4	34	24.7	5.3	K	9.4	49	23.7	31.2	*a*	8.2	6	20.6	0.1	K	9.1	26	48.5	6.7	
8.2		36.9	33.1	K	9.2		45.0	30.5	B	9.5		30.7	10.0		9.0		36.7	25.0	K*b*	9.2	27	1.0	25.4	
8.5		37.2	53.0		8.7		58.0	7.2		9.5		32.2	25.6		9.5		38.0	3.4		7.5		17.3	39.3	K
9.5		39.4	17.0		8.0	35	3.4	37.9	K	9.0		53.7	31.9		9.5	7	14.2	56.5		9.2		24.8	5.8	K
9.3		43.0	35.8	K	9.3		10.0	35.7	K*b*	9.4	50	20.2	55.4	B	9.2		20.3	33.3	*B*	9.5		49.3	21.2	
9.5		44.0	49.3	B	9.5		11.0	52.4	*B*	9.1		50.7	16.3	K	9.4		20.5	31.8		9.5	28	24.0	13.3	
9.2	14	7.2	50.9		9.2		23.8	4.8		8.5	51	10.1	48.9	K	9.5	8	5.4	16.0	*B*	9.5		43.9	54.0	
9.5		7.4	41.3		9.5		37.4	45.1	*aB*	9.3		48.1	59.7	K	9.5		26.5	54.0		9.0		53.4	39.0	
9.4		23.8	59.5	B	9.4		46.4	33.8	*a*	9.1		58.2	42.3	K	9.5		33.5	4.2		7.8	29	30.0	42.4	L*b*
9.0		24.0	32.5	B	9.1	36	1.9	47.6	K	9.4	52	17.1	3.6	B	9.1		37.3	14.0	*a*	7.2		33.0	24.7	L
9.5		33.6	4.1		9.5		5.6	26.0	B	9.5		43.7	35.8		9.2		48.0	49.6	*a*	9.5		49.5	59.2	
9.5	15	33.5	1.0	*a*	9.0		19.0	1.7		9.0		51.6	59.3	K	9.5	9	3.2	2.1		9.0		54.0	44.8	R
9.1		37.2	51.9		9.0		20.0	40.5		9.5	53	22.4	30.9		7.5		33.6	13.5	K	9.5		56.3	47.2	
8.8		44.0	15.7	K	9.5	37	0.7	5.4		9.5		24.7	45.7	*R*	9.0		46.6	15.0	*K*	9.5	30	1.3	9.3	
9.5	16	8.0	58.6	B	9.0		40.5	23.3	K	9.4		44.2	59.8	B	9.3		53.7	21.2		9.3		6.7	20.8	*B*
9.5		19.4	9.3		9.5		48.9	32.0		9.5		58.2	48.4		8.6		57.4	50.9	R*b*	9.5		13.0	31.0	
9.2		48.4	2.8	K	8.8		53.4	23.6	K	6.0	54	2.5	25.5	L	7.0	10	1.0	10.2	K	9.1		14.5	7.8	*K*
9.5		49.1	34.7	*B*	8.8	38	4.1	1.2		9.5		19.2	8.1		9.3		53.8	57.9		9.2		48.0	47.8	K
9.5		58.4	17.4		9.5		26.4	28.5		9.5		39.6	19.9		9.2		57.0	38.2		9.0		49.7	36.5	R
8.7	17	15.0	0.3	K	9.5		28.9	34.4		9.5		40.9	57.5		8.8	11	7.4	48.6		9.0		53.3	48.5	
9.5		21.9	53.5		9.5		36.7	6.8		8.8	55	2.0	1.2		9.0		11.6	51.9	R	9.0	31	3.8	25.4	K
8.8		22.4	43.5		9.5		47.5	56.2		9.3		3.3	49.3	K	9.5		25.1	58.6		8.2		8.3	24.0	K
9.5	18	6.4	56.7		9.4		55.7	12.1		9.3		47.3	24.3	K	8.5		38.3	12.6	L*b*	9.5		21.5	30.6	
8.7		6.9	34.8	*B*	9.4	39	0.0	16.3	B	9.2		48.7	43.4	K	9.5		52.3	25.0		9.5		32.0	56.5	
8.7		21.9	49.8	K	9.5		3.7	54.4		9.3		49.3	31.0	K	9.3	12	4.0	29.9	K	9.5	32	34.3	46.9	
9.2		24.4	35.1	*aB*	9.0		42.4	33.7	K	9.5	56	14.4	50.9		9.5		14.0	34.0		9.5		37.1	53.1	
9.0		26.0	8.4		9.3		53.5	44.5		9.5		29.3	15.7		9.5		38.7	40.2		9.5		54.4	52.0	
9.1		35.9	53.2	*K*	9.3	40	2.1	20.9		8.8		43.0	25.0	K	9.3		48.1	10.7		9.5		56.7	55.6	
9.0	19	1.0	12.0	K	9.2		12.2	12.0		9.4		47.9	59.0		9.3		49.4	4.4		9.4	33	54.4	31.7	K
9.4		8.9	37.0	B	9.3	41	14.2	38.1	*b*	9.5	57	6.0	22.3		9.5	13	15.3	47.3		9.0	34	7.7	24.8	K
9.0	20	30.7	0.9	K	9.2		43.6	1.6	K	6.8		19.7	57.2	K	9.5		20.3	15.3		9.5		30.4	59.6	
9.5		33.4	59.3		9.5		59.1	9.7	B	9.5	58	16.6	1.3		9.4		23.3	25.4	*b*	9.5		55.3	23.6	
9.5	21	36.8	44.3		9.4	42	16.7	9.1	B	8.8		22.6	50.5	K	9.5		28.6	47.0		9.0	35	6.0	48.1	R
9.5		58.9	37.5		9.1		45.8	2.3		9.5		26.0	10.5		9.4	14	20.7	59.8		9.5		9.7	5.1	*a*
8.2	22	0.9	26.4	K*b*	9.5		46.7	47.9		9.5	59	15.3	37.5		9.5	15	31.6	22.3		8.9		50.0	4.6	
9.5		17.9	57.0		9.5	43	8.2	23.5		9.5		43.4	50.0		9.5		47.3	59.7		9.5	36	24.8	7.2	
9.3		37.2	16.4	*aB*	9.5		22.2	27.0		9.5	0	4.8	50.0		8.5		58.1	1.7	K	9.1		41.8	27.7	*b*
9.5		47.9	26.7		8.8		32.4	59.9	K	8.9		9.7	16.8	R	9.0	16	19.7	29.6	R	9.2		45.8	41.7	
8.4		49.1	38.9	*B*	9.2		42.4	47.9		9.5		37.8	58.2		9.5	17	2.6	41.4		8.2	37	15.7	55.5	K
8.7	24	19.5	52.3		9.5		47.0	16.5		7.5		53.3	21.2	L*b*	8.5	18	40.3	25.7	R	8.7		35.4	33.8	L
8.8		36.9	15.6	K*b*	9.4	44	1.7	21.4	B	9.5		58.3	16.7		9.5	19	5.8	42.7		9.5	38	5.6	7.9	
9.5		38.9	29.9		9.5		25.2	19.7		9.5	1	1.0	39.9		9.4		29.5	36.5		9.5		27.6	55.2	
9.4		43.4	11.2	B	9.5		38.2	45.4		9.3		27.0	9.3		9.5		56.4	5.6		9.2		48.9	1.3	*b*
9.2		50.9	15.3	K	8.4		49.9	4.4	K	8.7		36.3	16.7	K	9.3	20	57.0	50.5	*b*	9.0	39	25.3	25.7	
9.5		54.2	59.9		7.7	45	49.3	49.0	K*b*	9.5		46.3	49.6		9.0		59.4	15.1	K	9.2		52.0	11.9	
9.5	25	0.9	15.6	*a*	8.8		49.6	6.0		*8.5	2	10.4	57.7	K	9.5	21	6.5	5.5		9.5	40	17.0	35.5	
9.5	26	47.9	25.4	*b*	9.5	46	19.8	27.1	B	8.7		11.7	14.7	K	8.7		36.0	37.9	K	9.5		38.0	30.0	
9.5	29	18.3	47.8		9.0		24.5	40.1		9.5		14.2	58.9		9.5	22	10.0	18.9		8.8		41.3	12.3	K
9.5		50.2	53.9		9.3		37.0	47.3	B	9.5		21.6	7.1		9.5		12.8	53.7		8.4		54.7	15.3	K
9.4		57.6	15.1	*aB*	8.6	47	13.3	52.9		9.5		29.0	23.0		9.5		48.3	23.3		9.5	41	18.7	11.2	
9.4	30	7.5	47.2	*ab*	6.8		21.2	4.0	L	9.5	3	49.4	53.7		8.7	23	23.6	59.1	K	9.5		27.7	53.7	K*b*
9.5		12.4	41.8		9.5		52.9	51.5		9.5	4	14.7	12.5		9.2		54.3	54.4	K	9.2		41.0	22.0	
9.5		23.1	49.0		9.3	48	0.2	34.4		9.5		19.0	44.1	R	9.5	24	14.0	46.6	K	9.5	42	12.3	55.0	
9.4		45.0	48.5	*a*	9.1		6.2	39.1		9.3		22.8	35.8	K	9.2		27.3	48.9	K	8.9	43	4.4	2.5	K*b*
9.5	31	40.4	29.2		9.5		6.7	2.0		9.4		37.0	18.6		7.8		40.3	21.6	K	9.4		50.5	44.0	
9.1	32	14.8	57.4		9.5		14.0	56.7		9.3	5	5.6	42.1	K	9.5	25	2.3	45.5		9.3	44	5.4	44.3	
9.0		39.4	46.6		*9.4		16.2	15.5	B	9.5		7.0	15.7		9.5		4.3	26.1		9.3		44.3	37.3	*a*
9.1	33	2.9	20.7	*ab*	*9.5		22.1	52.3		9.5		8.7	53.0		7.0		30.3	17.5	K	9.2	45	11.7	31.5	
9.3	34	8.5	42.8		9.1		24.3	4.3	K	8.7		9.6	46.9	K	9.1	26	26.4	36.7	*a*	9.1		21.7	42.8	R
9.0		19.2	46.1	K	9.3		28.6	2.4		9.5	6	9.7	54.5		9.5		34.6	44.9		9.0		27.4	37.8	K
10pr.		+ *28.81*	+ *2.56*		*10pr.*		+ *29.04*	+ *2.75*		*10pr.*		+ *29.21*	+ *2.87*		*10pr.*		+ *29.39*	+ *2.98*		*10pr.*		+ *29.64*	+ *3.11*	

4717 a					
9.5	*48*	*17.2*	*15.7*		*B*

4765 a					
9.3	*1*	*48.4*	*14.3*		*B*

m	4901 — 4934 22ᵘ		+12°		m	4935 — 4968 22ᵘ—23ᵘ		+12°		m	4969 — 5002 23ᵘ		+12°		m	5003 — 5036 23ᵘ		+12°		m	5037 — 5070 23ᵘ		+12°	
	′	″	′			′	″	′			′	″	′			′	″	′			′	″	′	
9.3	45	55.3	44.8		9.2	57	45.5	50.6	*b*	9.5	11	31.2	29.1		9.3	25	54.0	37.6	K	8.5	45	31.4	39.2	R
9.5	46	14.8	0.8		9.5	58	10.5	56.1		9.4		45.2	40.5		9.1	26	10.9	37.8	K	9.5		46.4	36.7	
9.2		27.0	5.6	*b*	9.5	59	1.9	16.7		9.3		59.7	38.5		9.4		47.4	14.0		8.5	46	2.4	45.1	
9.0		36.4	49.3	K	9.5	0	49.5	59.6		9.4	12	46.2	30.8		8.9	28	49.9	34.6	K	8.8		6.5	1[illegible]	
8.6		57.8	54.2	K	9.1	1	7.2	19.4	K	9.1	13	13.7	34.6	K	9.0	29	38.9	42.3	K	9.5		47.4	4[illegible]	
9.5	47	16.4	20.5		8.4		15.0	56.4	K*b*	8.7	14	21.7	24.5	L	8.7	30	42.4	4.7	K	9.3		52.9	2[illegible]	
9.5		41.5	7.6	*a*	9.2		21.8	55.2	K	9.1	15	1.2	14.5	K	9.5	31	10.0	11.5		8.5	47	28.9	24.5	K
9.3		41.5	23.3		9.5	2	20.2	39.8		9.2		8.2	38.8		9.5	32	1.4	21.7		9.3		29.8	8.9	
8.9	48	17.9	7.5	K	9.5		30.2	47.2		9.3		45.7	46.5	K*b*	9.5		3.8	54.4		9.3	48	33.8	2.6	
9.5		30.3	29.6		9.3		49.5	8.1	*b*	9.5		55.7	57.2		9.4		18.3	56.6		8.5	49	17.1	0.5	K
9.2		55.4	1.4		9.5	3	14.0	15.0		9.5	16	14.8	53.8	*B*	9.3		44.9	10.2	*b*	8.5		22.4	0.5	K
8.8	49	3.0	36.9		9.5		48.2	45.8		9.5		52.3	55.3		9.5	33	37.4	58.3		8.1		52.8	24.6	K
9.5		5.7	47.3		9.5	4	30.0	50.2		9.3	17	44.0	46.6		9.3	34	21.0	22.5		9.1	50	35.9	22.5	K
7.8		12.3	16.5	K	9.4		40.5	2.8		9.0	18	9.2	42.3		9.1	35	25.4	31.5	K	9.5		39.9	43.3	
9.5		17.0	2.2		9.5	5	26.2	27.7		9.4		45.9	59.1		9.5	36	37.4	59.3		9.1		40.4	22.1	K
8.8		32.1	54.2	K	9.4	6	0.7	56.2		9.4		52.0	59.8		9.3		41.4	53.0		9.3		50.4	54.5	
8.9		44.1	4.6		8.8		22.2	23.9		9.1	19	21.2	37.1	R	9.5		42.8	3.0	K	7.9	51	2.9	59.7	K
9.4	50	15.7	7.8		9.5		53.8	57.6	a~~K~~	8.5		43.7	18.7	K	9.5		54.2	15.5		9.3	52	37.5	42.7	
7.8		42.7	50.7	K	9.2	7	22.0	45.9		9.5	20	19.1	48.9		9.1	37	28.4	38.8	K	8.3		50.4	39.5	K
9.2		57.3	30.0	*b*	8.4		25.0	55.8	*K*	9.5		34.0	6.3		7.3	38	16.4	21.3	K	7.4		53.4	31.1	K
9.1	51	27.7	52.6	K	9.5		27.2	25.2	*K*	8.5		45.7	38.1	K	9.0	39	18.9	41.4		9.4	53	6.6	52.0	
9.5		28.2	5.7		8.9		49.3	7.8	*B*	9.5	21	10.7	5.6		8.6	40	28.9	24.9	K	9.5	56	5.9	11.0	
9.5	52	3.4	0.0		9.3		57.3	25.3	*B*	9.5		21.5	56.4		9.4	41	16.9	27.7		8.0		17.6	33.9	K*b*
8.9		22.2	53.0	K	9.2	8	11.7	44.0	*b*	8.8		26.0	50.6	K	9.4	42	3.8	59.0		9.4		17.8	3.4	
8.7		27.3	36.9	K	9.5		41.8	3.8		9.0		30.3	58.3		8.7		47.9	31.4	K	8.6		54.2	8.3	K
9.3		46.8	41.3	K	9.3		44.7	55.7		9.0		40.2	36.0	K	9.2		49.7	3.0		9.5	57	27.4	12.3	
9.4	53	3.0	7.7	*b*	9.4	10	10.6	7.6		9.5	22	10.7	35.7		9.2	43	18.0	29.0		5.5	58	16.9	35.4	K*b*
7.7		20.0	41.4	K	9.5		11.2	15.5		9.4		13.1	45.5		9.2		36.4	24.9		8.4		33.1	4.0	K
9.5	54	57.6	12.6		8.7		30.2	51.3		9.2		37.5	44.8	—	~~9.5~~		~~40.8~~	~~44.0~~	~~R~~	9.5		35.9	27.0	
9.3	55	58.6	59.2	*b*	9.5		32.2	9.9		9.4	24	36.1	50.4		9.5		57.4	22.8		8.5	59	6.1	0.9	K
9.5	56	50.3	22.3		9.5		54.7	22.8		9.3		42.0	42.5	K	8.7	44	0.8	57.9	K	9.5		12.7	19.4	
8.6		56.8	2.8	K	9.2		56.2	35.7	R	9.5		59.4	42.7		8.9		37.8	3.7	K	9.2		14.1	12.1	R
9.5	57	7.8	57.0		9.2	11	4.8	7.0		9.5	25	0.8	7.8		9.4	45	4.9	17.9		9.5		18.9	46.9	
9.5		18.7	44.9		9.0		13.2	57.3	K	9.5		7.4	32.9		8.7		6.8	3.7	K	8.8		24.2	0.8	K
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*29.83*	*3.19*		*10 pr.*		*30.03*	*3.25*		*10 pr.*		*30.19*	*3.29*		*10 pr.*		*30.42*	*3.32*		*10 pr.*		*30.61*	*3.34*	

Zone +13°

1—40					41—80					81—120					121—160					161—200				
	0ᵘ		+13°			0ᵘ		+13°			0ᵘ		+13°			0ᵘ		+13°			0ᵘ—1ᵘ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	0	18.0	26.6	K	9.4	14	10.3	1.3	B	9.3	28	48.2	31.6		9.1	45	17.3	14.9	K	9.5	57	32.4	44.5	
9.5	1	4.0	45.2		9.5		38.9	50.0		9.1		52.6	7.5	*b*	8.9		33.8	41.9	K	8.6		47.1	20.0	
7.8		19.9	20.0	K	9.5		48.7	47.9		9.5	30	31.5	23.3		9.5	46	12.8	8.2		9.5		53.6	14.1	
9.5		45.6	57.2		9.4		55.0	1.3	B	9.5	31	25.2	43.0		9.5		53.0	14.4		9.5	58	12.3	54.4	
9.5		50.0	44.7		9.5	15	41.2	36.5		9.1	32	0.0	10.5	K	9.5	47	45.3	46.3		7.3		57.8	6.6	B
8.9		56.0	37.0	K	7.0	17	9.3	31.2	K	9.0		13.2	25.3		9.5	48	11.8	58.8		9.3	59	59.9	43.2	
9.5	2	49.4	20.3		9.5		19.5	16.7		9.0		15.2	12.6	K	6.5		32.7	10.6	K	9.5	0	10.2	59.0	
9.2		50.0	15.4		9.3		19.8	8.7	K	9.4	33	20.5	31.3		9.5		57.3	43.3		9.2		17.6	1.7	K
9.5	3	4.9	18.5		9.5		24.5	45.7		9.5		20.9	44.8		9.5	49	0.9	13.7		9.5		19.8	48.1	
8.8		7.4	10.6		9.5		27.0	31.5	B	9.5		43.9	42.7		8.7		6.0	59.0	R	9.5		47.3	12.0	
9.3		36.2	38.3		9.2	19	42.6	20.3	K	9.1		47.5	51.9	*b*	9.5		41.7	46.7		9.2		59.5	55.5	*b*
9.4		36.2	31.8		8.5	20	1.8	37.8	K	9.3	34	36.6	55.4		9.5	50	4.6	24.6		9.5	1	10.0	33.5	
8.7	4	59.0	46.0	K	9.5		16.3	37.7		9.5		48.5	31.9		9.5		12.6	32.6		9.5	2	9.0	45.3	
9.3	5	6.9	18.6		9.5		45.4	48.9		8.5		48.5	12.4		9.5		25.3	47.8		9.5	3	35.1	26.2	
9.2		28.5	40.8	K	9.5	21	5.2	22.5		9.1		58.8	8.3	K	9.5		30.6	55.2		8.2		36.9	55.3	K
9.5		36.4	40.5		9.5		6.5	48.6		9.5	35	21.6	25.0		9.3		31.6	29.1	B*b*	8.5	4	6.1	5.8	K
9.2		42.0	2.0	K	9.1		56.4	5.6	K	9.3		51.0	9.1	K*b*	9.5		37.5	2.1		9.4		8.3	44.9	
9.5	6	10.9	8.9		9.3	22	21.0	56.7		9.1	37	13.2	33.2	*b*	9.4		37.9	35.0		9.5		22.4	5.7	
9.5		17.7	58.7		9.5		21.6	13.8		9.5		44.1	34.3		9.5		59.3	16.2		9.5		41.3	28.6	
9.5		18.4	49.8		9.5	23	15.0	44.1	*b*	9.5	38	3.8	25.0		9.5	51	9.2	17.3		9.2	5	34.7	45.6	
9.1		25.9	40.2		9.5	24	6.3	18.4		9.3		38.9	49.6	K	8.9		27.3	56.1		9.5		41.3	43.3	
9.5		31.1	13.5		9.5		6.5	26.7		9.5		48.5	3.2		9.3		49.3	20.2		9.5		43.0	36.7	
9.5		47.6	42.1		var		28.7	48.0	B	9.3		51.2	31.5	K	8.5	52	7.7	50.1	K	8.5		50.6	4.6	K
9.5	7	31.5	37.5		9.5		53.3	47.8	B	9.3		56.3	31.0	K	9.5		48.3	27.2		9.5		58.0	45.3	
9.3		32.8	25.4		9.5	25	5.5	29.7		9.2	39	1.7	40.1	K	9.3	53	39.1	13.1	K	9.1		58.7	10.3	K
8.5	8	34.0	53.2	K	9.5		21.6	2.3		9.2		2.6	56.5		9.5	54	9.3	31.4		9.5	6	10.4	41.7	
7.5	9	17.8	6.6	K	9.5		28.0	49.0		8.7		5.5	12.2		9.5		23.0	57.5		9.5		18.5	1.9	
9.3		18.8	12.8	K	9.5		35.8	41.8		9.5	40	0.2	50.7		9.5		27.3	47.0		9.0	7	11.4	53.0	K
9.3	10	9.6	59.9	K	7.4		46.2	3.1	K	9.4		30.0	23.9	B	9.2		45.3	24.1	K	8.8		26.7	54.1	K
9.2		31.6	48.6	K	9.5		58.8	28.8		9.4	41	24.2	24.8		8.5		56.9	28.0	K	9.1	8	7.9	17.2	*b*
9.5	11	20.5	40.2		9.5		59.9	53.8		9.0		49.3	12.8	K	9.5	55	5.3	25.0		8.5	9	42.0	9.5	K
9.5		44.9	31.2		9.5	26	22.1	13.6		9.0	42	7.1	40.9	K	9.0		8.9	6.7		7.0		52.9	28.9	K
9.5		45.7	24.0		7.5		40.7	42.7	R	9.5	43	3.5	4.5		9.1		17.6	52.3	K	9.3	10	26.9	35.4	B
8.2		48.0	15.9	K	9.5	27	18.0	6.6		9.0		24.8	41.6		9.5	56	1.9	55.3		9.4		27.0	32.2	
9.0		55.9	3.1	R	9.5		32.0	56.3		8.4		38.5	17.7	K*b*	8.7		14.0	9.5	K	8.9		27.1	37.4	
9.1	12	33.2	30.9	*b*	9.1		47.6	57.3	K	8.9		46.5	27.4	R	9.0		23.5	12.7	K	9.0		29.0	23.8	K
9.5	13	5.0	54.1		9.3	28	17.2	44.1		9.5		51.8	53.3		9.5		48.7	37.7		9.5	11	17.3	11.3	
9.5		13.1	35.8		9.3		19.8	50.7		9.4	44	12.8	44.6		9.5		54.0	55.9		8.7		31.7	8.3	K
9.5		49.3	3.2	B	9.5		19.9	12.0	B	9.4		32.2	49.6		9.4	57	3.8	27.2		8.6	12	34.9	1.6	K
9.5	14	1.3	55.7		9.5		20.0	56.4		9.0	45	16.2	22.0	K	9.2		5.0	54.8		9.5		52.8	54.1	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.82*	*3.34*		*10pr.*		*31.06*	*3.32*		*10pr.*		*31.26*	*3.29*		*10pr.*		*31.44*	*3.26*		*10pr.*		*31.63*	*3.21*	

201—260				261—320				321—380				381—440				441—500			
	1ᵘ		+13°		1ᵘ		+13°		1ᵘ—2ᵘ		+13°		2ᵘ		+13°		2ᵘ		+13°	
m	′	″			′	″			′	″			′	″			′	″		
9.1	12	58.1	49.6	*b*	8.0	33	19.6	2.6	K	9.5	53	58.3	26.1		9.3	15	16.9	28.4		9.2	37	1.9	10.3	
8.8	13	43.5	10.2	K	9.0	34	2.0	39.3		9.5	54	5.5	23.5		9.5		33.0	5.0		7.8		6.2	37.5	K
9.5	14	28.2	56.2		9.5	35	28.8	2.0		9.5		22.7	28.9		9.4		38.0	1.2		9.4		7.6	57.6	
8.1		32.7	35.9	K*b*	9.5		34.2	29.6		9.3		35.6	24.6		9.5		41.7	28.2		9.1		15.6	1.9	
9.4	15	2.3	24.3	B	9.5		39.0	8.6		8.5	56	7.3	29.0		9.4	16	46.2	50.0		9.4		27.3	57.8	
9.4	16	24.0	18.0		8.4		55.9	58.4	K*b*	8.8		28.5	52.9	K	8.7		51.3	33.6		8.4		29.5	19.2	K
8.8		37.7	9.0	K	8.8	36	3.1	42.1		9.5		50.6	11.1		8.8		58.7	14.2		9.4		51.6	2.8	
9.5		41.2	50.3	B	9.3		4.7	5.5		9.5	57	34.6	0.6		8.8	17	25.5	49.8	K	9.4	38	41.0	14.0	
9.2		52 4	56.3	*b*	9.5		15.5	1.4		8.6		51.2	51.5		8.6		33.2	53.3	K	9.5	39	11.5	46.1	
9.3		52.5	51.1		8.3		40.4	18.9	K	9.5	58	13.2	19.5		8.5	19	26.6	18.5	K	9.3	40	0.6	29.5	
9.5	18	48.7	23.1		9.5		52.9	53.7		9.1		33.6	24.2	K	9.5		39.5	47.5		9.5		24.7	50.7	
8.7		50.6	12.1	K*b*	9.5	37	2.4	44.6		9.5		43.4	34.5		9.5		58.3	51.3		9.5		32.5	31.6	
9.5	19	14.0	37.6		9.5		29.2	56.8		7.9		51.0	52.7	K	9.5	20	14.2	48.0		9.4		43.0	9.3	
9.5		22.0	58.8		9.5	40	1.3	46.0		9.5	59	0.5	1.2		9.5		37.6	21.0		9.1	41	0.9	18.9	K
9.0		58.9	4.2	K	8.9		5.4	52.4	K	9.2		4.6	58.2	K	8.4		40.6	14.0	K	9.2		35.7	36.6	K
8 8	20	35.5	43.9		9.5		8.3	5.7		9.2		5.6	55.8	K	9.5	21	7.6	44.7		8.0	42	15.9	6.8	K*b*
9.5		38.0	44.6		9.5		12.5	10.0		8.8	0	55.8	35.8		9.5		29.1	36.4		9.4		37.7	18.5	
9.2		53.1	54.1		8.7		51.8	20.3	K*b*	8.7	1	48.5	44.2		9.5		49.2	56.5		8.9		49.7	54.8	K
9.0	21	7.0	4.9		9.5		53.7	50.8		9.0	2	6.6	20.3		9.5	22	23.8	23.2		9.5	43	30.5	28.1	
9.5		56.4	53.0		9.5	41	11.3	32.2		9.0		8.2	17.7		8.7		41.2	36.6	K*b*	9.0		48.1	38.3	K
9.3	22	0.7	38.0		9.5		26.2	21.2	*a*	9.1		10.5	44.5		9.5	23	2.5	59.8		9.3		50.5	49.0	
8.7		10.0	27.6	K	9.5		36.1	29.8		9.3		50.6	25.3		8.5		2.8	18.7	K	9.3		59.2	13.6	
9.5		51.1	3.1		9.3		56.5	34.5		7.9	3	1.6	0.7	K	9.5		7.1	17.5		9.0	44	1.9	1.5	K
9.5	23	12.2	59.2		9.0	42	12.2	48.9		9.2		12.3	40.4		9.5		42.0	41.0		9.0		46.1	29.6	
8.9		31.8	5.7	K	8.7		14.6	30.5		9.2		17.1	53.4	K	9.5	24	25.4	53.3		9.4	45	47.3	59.9	
9.5	24	2.9	51.8	?	8.5		18 3	37.5	L	9.5		39.5	17.1		9.5	25	43.2	46.8		8.0		59.1	37.2	K*b*
9.5		57.4	44.4		9.3		31.5	35.6		9.5		45.7	56.8		9.5	26	50.8	49.3		9.3	46	2.7	42.0	K
9.5	25	15.1	17.9		9.5	43	20.5	10.8		9.3	4	24.6	8.2		8.8	27	8.9	54.3	K	9.5		21.0	19.2	
9.5		18.2	28.4		9.5	44	0.5	37.3		9.5		47.8	51.6		9.3		21.7	2.1		9.3		33.4	27.1	
8.7		19.7	43.1	K*b*	9.3		11.7	56.6		9.5		48.0	43.7		8.2		48.6	10.8	K	9.0		46.6	3.4	
9.0		43.4	23.5		9.5		22.8	8.2		7.5		52.6	14.5	L	7.5	28	7.9	6.0	K	9.3		52.0	25.8	
9.5		51.0	44.2		8.0	45	3.5	27.7	*B*	8.6	5	11.1	33.2	K	9.5		23.5	23.3		9.2	47	14.8	49.7	
9.5	26	0.7	44.3		9.3		6.5	30.1		9.5		30.7	59.0		8.3		25.8	3.1	K	9.5		15.8	47.7	
9.3		9.9	31.4		8.7	46	8.9	3.9	K	8.9		36.0	50.7	K	9.5		27.5	21.3		9.5		33.5	3.8	
9.5		39.2	4.4		8.6		9.0	5.9	K	9.2		46.9	46.0		9.5		44.5	0.1		8.7	48	12.6	5.2	K
9.3		54.2	10.0		7.9	47	0.7	3.0	K	9.2	6	18.2	57.6		9.0		50.0	45.5	K	9.0		15.9	18.9	K*b*
9.5		55.2	57.5		8.7		5.0	26.2	K	9.3		58.1	55.3		9.5		59.2	58.5		9.4		19.9	10.5	
7.8	27	11.5	38.2	R	9.2		16.1	37.6		9.4	7	6.3	6.8		9.5	29	0.4	54.7		9.3		44.2	36.2	
9.0		18.4	26.0		9.5		39.5	22.2		9.5	8	2.6	10.1		9.5		5 5	10.2		9.5	49	9.8	4.5	
6.6	28	1.1	54.9	K	9.3	48	24.6	37.7		9.5		42.5	41.4		8.0		54.2	31.0	K	9.0		35.1	44.5	
9.5		30.2	37.2		9.5		45.7	39.1		9.5		56.6	15.0		9.4	30	36.4	2.1		9.4		37.1	24.4	
9.5		30.9	51.2		8.7		54.1	50.9	K	9.3	9	4.5	25.5		8.2	31	10.5	52.9	K	8.8		49.6	28.2	
9 5		43.5	51.9		9.4	49	14.6	19.9		9.3		19.2	10.2		9.2		16.6	53.4	*a*	9.4	50	44.6	10.5	
9.5	29	43.4	41.9		9.2		33.7	49.0		8.2		25.0	47.8	K	8.8		54.5	31.7	K	7.5		47.9	1.2	K
8.7		53.3	25.3	K	9.1		50.2	14.3	K	8.8		55.7	34.0		9.5	32	27.3	37.3		9.5		52.5	33.7	
9.5	30	24.3	20.2	B	8.1		55.8	40.3	K	8.0	10	12.5	47.7	K	9.5		33.0	42.7		9.5	51	10.8	50.8	
9.3		31.0	4.8		9.5	50	25.2	49.5		9.5		20.0	39.0		9.5		34.5	13.2		9.3		39.6	27.5	
9.5		36.2	48.7		9.5		37.3	58.6		8.3		42.4	17.1	K	9.4		57.8	14.0		9.5		49.5	44.7	
9.5		40.8	38.4		9.1		56.8	21.0	*b*	9.5	11	3.2	18.7		9.5	33	16.5	37.9		9.4	52	10.7	15.7	
8.1		43.5	11.4	K	8.7	51	0.1	38.3		9.5		22.5	51.4		9.4		18.2	20.9	B*b*	8.8		19.6	56.0	K*b*
9.5		47.5	21.1	B	9.5		8.2	16.7		8.0	12	21.5	38.6	K	9.5		46.5	58.7		9.4	53	52.7	28.5	*b*
9.5		51.0	56.5		9.4		16.8	0.9		9.5		35.5	19.8		9.4		50.2	32.4		9.3	55	3.0	59.4	
9.5	31	5.5	0.3	B	9.4		25.0	58.6		9.3		36.6	33.2		9.3	34	4.2	44.5	K	9.5		20.5	44.1	
9.5		20.7	3.7		8.1		31.5	55.2	R	8.6		45.5	0.6	K	8.9		13.9	58.5	K	8.0		32.5	53.9	K
7.5		30.1	33.6	K*b*	9.5		54.2	8.7		9.5		51.0	49.7		9.4		15.5	9.6		9.5		46.3	42.0	
9.5		47.8	16.9		9.5	52	39.6	35.6	*a*	9.5	13	19.4	37.4		9.5		31.5	4.5		7.5	56	51.1	13.9	L
9.0	32	25.8	43.7		9.1	53	6.2	38.1	*a*	9.3		29.2	31.4		9.5		32.8	1.3		9.3		59.8	14.6	B
9.5		34.4	46.2	*a*	9.4		17.6	32.5		9.0		36.8	16.2	K	9.5		57.5	24.0		9.5	57	22.9	31.1	
9.0		54.2	23.7		8.7		26.1	35.7	K	9.5		41.5	5.5		9.4	35	53.4	53.6		9.0		26.2	41.7	
9.3	33	10.1	8.5		9.2		48.4	49.6	B	9.5	14	32.6	54.7		9.3	36	34.5	52.3		9.4		27.5	4.4	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*31.89*	*3.11*		*10pr.*		*32.14*	*3.00*		*10pr.*		*32.39*	*2.86*		*10pr.*		*32.65*	*2.67*		*10pr.*		*32.85*	*2.40*	

501—560					561—620					621—680					681—740					741—800				
	2ᵐ—3ᵐ		+13°			3ᵐ		+13°			3ᵐ—4ᵐ		+13°			4ᵐ		+13°			4ᵐ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
3.5	57	48.0	42.1		8.9	22	7.7	45.1	K	6.8	51	13.3	35.5	K	9.5	18	8.4	39.3		9.5	48	45.0	42.2	
9.5		51.7	24.2		9.5		18.0	50.0		8.5		20.2	18.7	K	9.0		27.6	53.5		9.5		51.3	35.0	B
3.6		52.4	8.1	K	8.5		41.2	48.3	K	9.0		22.0	24.2	K	9.5	19	7.8	24.2		9.4		51.6	57.8	
9.0		58.9	0.4	K	9.4	23	4.2	12.1		9.0		22.1	18.7	K	9.4		11.0	55.1		9.5		55.4	51.9	
9.5	59	11.2	27.7		8.8		7.3	5.2	K	7.8	52	9.0	53.8		9.1		54.6	32.2	*b*	9.5	49	7.5	17.2	
9.5		11.4	5.1	K*b*	9.5		26.7	23.8		9.5		14.3	14.5		9.2		56.9	52.3		9.5		13.5	25.3	
3.8	0	7.3	43.1	K	9.5	24	47.0	57.5		7.0		30.2	28.9	K	9.5	20	25.7	0.2		9.1		24.5	24.6	
9.4		16.2	51.0		7.5	25	19.9	17.2	K	9.5		49.6	48.3		7.5	21	21.5	35.3	K*b*	9.0		29.4	42.3	K
9.5		22.2	34.6		8.3	26	29.7	40.3	K	9.2	53	18.2	46.9	K	8.2		56.6	59.9	K	8.6		37.4	46.8	K
9.5		50.3	42.2	*a*	9.3		55.7	20.6	*R*	7.8		40.3	26.2	K	5.7	22	30.5	25.2	K	9.5		45.7	34.7	
9.5		51.4	6.1		9.3	27	24.2	42.0	K*b*	9.5	54	9.8	55.2		8.0	23	20.0	35.3	*B*	9.5	50	4.6	31.9	
9.5		59.3	24.2		9.2	28	22.5	58.2	K	9.5		24.9	54.1		8.3		23.5	2.6	K	8.3		7.0	43.3	K
3.8	1	6.2	36.7		9.0		27.5	7.9	K	9.5		48.1	4.7		9.3		32.9	49.2		9.3		11.1	58.3	*R*
3.3		49.3	14.8	K	9.5		45.0	9.3		9.3	55	8.6	28.0		9.5	24	11.6	4.9		9.5		14.0	15.5	
3.9		54.7	8.3	K	8.9	29	7.5	52.6		9.5		15.9	48.4		9.5	25	4.5	28.8	*b*	9.5		29.9	55.2	
9.5	2	15.2	39.8	B	8.4	30	30.3	8.3	K*b*	8.9		19.4	32.2		9.5	26	39.9	10.9		9.5		36.0	43.0	
9.5		21.3	30.4		9.0	31	0.9	12.4	K	9.3		23.8	1.4	B	9.5	27	12.5	1.5		9.5		47.8	27.8	
9.5		43.2	13.8		8.8		11.2	14.7	K	9.1	57	1.6	45.3		9.5		43.3	17.7		9.5		56.5	25.1	B
3.8		43.3	47.1		7.0		13.9	25.5	K	9.2		7.9	17.3	*b*	8.7	29	12.5	37.6	K	9.5	51	32.7	56.8	
9.5	3	27.8	2.2		8.9	32	10.0	43.0		7.7		23.2	53.8	K	9.4	30	14.3	37.1	?	9.5		32.7	16.6	
3.8	4	14.5	28.8	K	8.0		30.9	5.6	K	9.5		55.9	15.9		9.5		15.1	32.6		9.0	52	24.5	36.0	
9.5		46.9	6.7		9.5		45.2	52.8		8.6	58	25.2	57.9	K	8.3		46.7	48.6	K	9.5		29.0	44.8	B
9.4	5	15.9	53.8		9.0		53.2	17.5	K	9.1		27.5	58.3	B	9.5	31	21.5	26.0	?	9.5		31.6	4.8	
9.0		21.8	46.7	K	8.7	33	26.6	4.4	K	8.5		45.2	20.4	K	9.0		28.8	22.7	K	9 5		48.4	15.2	
9.4		54.7	46.4		9.5	34	25.5	6.1		8.3	59	3.2	26.5	K	8.9		50.7	12.0	K*b*	9.0		50.3	4.3	
8.8	6	6.5	21.8	K	9.4		35.2	20.7		8.0		12.9	8.4	K*b*	9.3	34	3.9	40.9	*b*	9.5		52.8	17.1	
9.5		47.4	6.6		9.4	35	2.9	23.7		8.8	0	11.8	8.9	K	9.5		29.8	1.8		9.5		59.0	52.5	
9.3	7	0.5	37.4	*R*	9.4		28.1	24.9		6.3		56.6	0.8	K	9.0		51.8	11.4		9.4	53	5.3	4.9	
8.3		17.0	46.0	K	9.4		45.7	52.7	B	9.1	1	20.8	1.0	K	9.5	36	5.0	6.8		8.1		7.7	53.8	L
8.7	8	24.8	19.0	K	9.0	36	32.5	46.9	K	9.5		39.2	18.7	B	9.5		26.1	32.8		9.5		19.0	23.9	
9.3		27.3	44.2		9.3		39.2	33.0	*aR*	8.6	2	50.3	53.9	K	9.3		28.3	23.6		9.5		20.3	28.3	
9.1		44.0	59.9	*b*	9.4	37	19.7	35.4		9.2	3	3.6	5.2	*b*	9.2	37	16.5	47.9	*a*	9.5		27.2	12.8	
9.5	9	7.0	59.8		9.2		32.0	4.6	*a*	9.5	4	47.7	49.0		9.5		19.0	53.8		9.5		29.0	19.3	
9.5		16.7	21.4	*a*	7.0	38	22.7	3.6	K	9.3	5	13.0	12.8	*b*	9.0		22.1	46.9		9.5		31.4	6.7	
7.0		51.8	18.9	K	9.1	39	10.2	56.5	K	9.5	7	38.3	18.2	*b*	9.5	38	10.8	35.3		9.5		34.8	14.7	
9.3	10	49.7	47.0		9.5		11.3	17.2	*a*	9.4	8	40.9	59.5		9.2	39	34.7	35.4	*Rb*	9.5		38.0	49.7	
9.2	11	54.0	17.3	K	9.5		22.6	16.9		9.4	9	14.7	2.5		9.4	40	25.1	11.7	*R*	9.1		49.1	26.4	*R*
9.0	12	24.3	38.8	K	9.0		33.2	39.4		9.5		19.6	53.9		9.5		44.9	4.7		8.4		58.5	5.9	L
9.4	13	9.2	15.2		8.5		38.6	54.5	K	6.5		37.0	28.7	K	9.5	41	1.2	41.7		8.0	54	10.0	41.9	K
9.4	15	48.8	44.3		9.5		57.9	47.3		9.0	10	44.9	50.2		7.7		45.9	27.5	L	9.5		22.6	13.0	
8.5		50.3	18.7	K	9.5	40	14.9	45.2		7.0	11	2.4	21.4	L	9.5		53.3	13.0		8.9		38.8	8.2	K
9.5	16	28.7	42.5		9.3		22.8	28.5		8.0		35.5	56.1	K	9.5		54.1	31.5		9.2		45.8	21.3	B
9.3		38.1	28.2		9.1		23.0	32.2		5.7		48.6	40.6	K	9.3	42	0.8	17.6		9.1		56.1	31.2	*K*
9.2		48.4	30.5	*R*	9.2		26.1	53.1		9.3	12	22.3	14.2		9.3		2.5	8.0		9.5	55	43.4	3.8	
8.0	17	21.8	34.3	L	9.5		37.6	12.4		6.5		44.6	31.1	K*b*	8.9		32.9	58.4	L	9.2	56	6.4	8.2	*R*
9.2		36.5	56.5		9.5	42	5.3	2.4		9.5	13	7.0	19.4		9.5		32.9	34.6		9.5		8.5	49.5	
9.5		38.1	51.3		9.0		24.6	23.8		7.5		38.5	14.5	K	9.5		50.4	31.0		9.1		10.3	45.7	*aR*
8.7		40.7	6.7	K*b*	8.7		30.0	30.6	K	5.7		55.6	43.4	K*b*	6.8	43	40.0	24.2	K	9.5		19.5	37.9	
9.5	18	23.2	4.9		9.3	43	2.8	40.1		9.3	14	21.0	35.3		9.4	44	17.5	15.1		9.0		22.0	45.0	
8.5		24.8	47.8	K	9.5		15.4	50.4	*a*	9.5		30 6	35.8		9.5		53.9	20.3		7.7		39.4	6.4	*B*
9 5		45.4	58.0		9.5		57.9	4.5		9.3		31.4	53.9		9.5	46	11.0	26.9	B	9.3	57	0.0	29.7	
9.1		48.0	39.2	*R*	8.5	44	41.2	30.7	K	9.2		43.5	1.9		9.5		24.5	4.3		8.8		11.0	38.8	*R*
9.3	19	1.3	53.6		7.5		48.9	56.5	K	9.5	15	26.5	8.8		9.5		49.0	54.2		9.0		13.4	35.7	*R*
8.8	20	30.6	36.8		8.0	45	40.2	4.7	K	8.3		33.0	28.9	L*b*	9.5		52.8	10.1		9.5		20.7	59.6	
9.5		59.2	57.5		9.2		55.9	50.1		9.5	16	13.5	39.5		9.5	47	11.0	13.0		9.3		24.5	8.0	
9.2	21	2.5	52.1	K	7.5	46	29.2	19.7	K	9.3		30.0	25.6		9.5		24.1	59.9		9.2		32.5	44.8	
9.5		11.0	6.1		8.8	49	23.0	18.6		9.5	17	34.6	50.2		8.5		43.0	25.6		8.0		39.9	5.5	K
9.0		57.9	42.5		8.9	50	6.3	46.0	B	9.5		45.6	0.2	*b*	8.9		59.5	44.6	K	9.5		54.7	38.1	
9.5	22	4.6	59.3		9.1		33.3	22.1		8.9		59.0	45.0		9.2	48	12.0	52.5	*R*	9.2	58	9.5	38.2	K*b*
9.4		5.7	45.1	*aB*	9.4		44.6	17.3		9.0	18	6.4	38.1		5.0		15.0	17.0	K	9.5		14.5	2.2	
		+	+				+	+				+	+				+	+				+	+	
10pr.		33.07	2.28		10pr.		33.32	1.96		10pr.		33.52	1.64		10pr.		33.72	1.19		10pr.		33.79	0.96	

544 *a*
9.6 | 16 | 50.6 | 54.0 | *B*

801—860					861—920					921—980					981—1040					1041—1100				
	4ᵐ—5ᵐ		+13°			5ᵐ		+13°			5ᵐ		+13°			5ᵐ		+13°			5ᵐ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	58	16.2	5.7	K	9.4	11	9.8	11.8	B	9.5	26	14.3	20.4	a	8.9	39	38.7	22.6		9.5	48	11.7	59.0	
9.4		18.1	30.4		9.5		31.4	16.4		8.4		18.5	54.1	K	9.5	40	22.2	24.4		9.5		16.9	51.9	a
7.5		31.6	53.2	K	9.2		44.3	4.5	a	9.5		22.7	19.0		9.5		23.4	53.1		9.1		31.4	4.6	K
8.3		38.8	26.5	L	8.0		52.9	23.5	K	9.4		30.7	58.7		9.4		33.0	14.3		9.3		37.5	6.3	K
9.5		42.8	12.7		9.4	12	5.9	10.9		9.5		40.5	49.8		9.2		47.3	11.9		9.3		40.5	1.0	
8.7		52.5	39.5		9.5		10.2	5.8		9.5		53.4	54.2		9.3		48.5	22.5		9.5		45.5	29.9	
9.5	59	28.1	13.0		9.5		34.3	13.2		8.5		55.3	18.9	K	9.1	41	3.9	55.4	B	9.4		50.0	39.7	a
9.2		59.5	2.2		9.0		50.0	36.2	K	9.5		59.0	58.8		8.7		11.8	52.4	K	9.5		50.8	59.5	
9.5	0	1.8	10.6		9.5	13	14.1	1.9		9.5	27	3.0	14.8		9.4		20.6	38.8	R	9.5	49	10.8	33.5	
9.5		9.2	54.1		9.1		19.2	11.9	Kb	8.5		8.8	11.1	K	9.3		33.1	25.0		9.2		15.5	20.3	
9.5		16.5	14.1		9.3		37.4	58.5		9.3		13.6	33.7		9.5		45.0	18.3		9.1		18.8	2.3	K
9.0		20.3	47.0		9.4	14	8.0	12.9		9.5		19.5	23.5		9.5		49.0	32.9		8.3		20.3	41.0	K
9.0		26.8	46.5		9.5		21.9	57.0		9.5		29.5	37.4		9.4		56.0	39.0		9.1		24.4	15.3	
9.3		38.0	45.2		9.5		25.7	1.1		9.4		35.9	55.8		9.2	42	3.5	15.0	K	9.1		32.2	1.2	K
9.4		55.3	18.7		8.7		33.3	5.4	K	9.4	28	13.7	5.7		9.5		10.4	59.8		9.5		47.3	29.7	
9.3		56.4	47.9		9.4		36.9	6.9		9.5		36.8	32.0		9.0		17.5	19.8	K	9.3	50	21.0	3.4	
8.7	1	4.5	43.9	L	9.5		42.4	37.9		9.5		56.7	14.6		8.6		19.2	50.2	K	9.4		21.3	58.8	
9.4		45.4	9.3		9.2		49.3	48.8		9.0	29	5.8	29.3	b	9.5		25.0	10.4		9.5		27.1	8.5	
8.8		46.7	1.2		9.3		51.5	36.4		9.3		14.6	57.0		9.5		46.5	14.9		9.5		38.0	36.0	
9.5		58.8	41.3		9.3	15	13.3	33.8		9.5		15.7	2.7		9.4	43	1.0	25.4		9.5		43.2	14.5	
7.0	2	0.6	22.1	L	9.3		16.0	48.6		9.4		19.1	27.9		9.5		4.5	10.4		9.2		47.2	16.1	B
8.4		2.3	48.3	S	9.2		22.1	22.5	b	9.5		27.0	38.3		9.4		4.7	36.8		9.5		49.2	18.1	
9.5	3	3.8	39.7		9.5	16	2.2	56.1		9.5		32.2	48.6		9.1		28.5	20.8	a	9.3		56.1	28.4	
9.4		11.5	24.7		9.5		21.5	4.3		9.5		58.2	7.9		9.3		39.3	49.7		9.5		56.3	33.3	
9.5		31.7	21.3		9.5		23.0	40.1		9.5	30	15.2	31.0		9.5		40.5	28.8		8.4	51	8.5	42.3	K
9.4		52.5	44.7	B	9.5		36.5	10.7		9.5		25.6	23.6		9.5		50.8	20.6		9.5		8.5	3.2	
9.3	4	4.0	48.9	B	9.5	17	19.0	44.0		9.5		30.6	5.5		9.0		59.5	20.4		9.3		19.2	45.7	
8.8		9.1	44.4	K	9.4		20.7	30.2		9.4		32.8	26.8	b	9.5	44	0.8	31.7		9.1		23.4	52.0	
8.8		31.8	11.9		9.0		40.0	36.3		9.5		33.6	45.4		9.3		17.2	38.9		9.5		25.5	10.1	
9.0		35.2	49.2		9.5		49.2	15.1		9.4	31	0.1	29.3		9.5		18.5	6.4		9.5		28.4	8.6	
8.8		41.7	44.7	K	8.8		53.9	36.5	K	9.5	32	23.0	55.0		9.5		22.4	51.6		9.5		36.2	7.7	
8.8		46.4	47.8	K	9.5	18	24.7	46.5		9.5		54.5	12.4		9.5		34.9	22.0		8.7		50.5	2.3	
9.4	5	16.8	55.9		8.0		38.0	27.7	K	9.5	33	8.7	37.2		9.4		37.1	25.3		9.1	52	14.4	55.1	
9.5		28.0	25.8		9.3		45.1	53.4	a	8.9		17.8	4.3	Kb	9.5		43.3	23.6		9.4		15.6	39.7	
9.3		36.2	6.2		9.0	19	7.1	0.8		9.0		26.1	51.0		9.4		43.4	2.2		9.5	53	0.4	59.2	
9.5	6	3.3	35.9		8.5		8.7	53.9	K	9.5		30.7	28.7		9.5		52.2	14.6		7.8		17.7	6.5	K
9.5		10.2	56.8		9.5		15.8	29.1		8.5		58.4	31.5	K	9.4	45	14.1	45.1		9.0		19.4	25.1	
*9.2		21.2	56.7		9.3		17.6	15.9		9.5	34	4.5	10.0		8.5		26.6	50.8	K	9.0		29.1	31.4	
9.5		58.3	46.7		9.4		25.7	42.5		9.5		7.2	22.1		9.1		50.3	11.5	b	9.0		41.2	3.3	
9.5	7	17.0	13.1		9.4	20	0.6	29.3		9.5		15.1	2.5		9.5		59.3	50.1		9.2		42.2	5.0	B
9.4		31.4	4.8		9.5		11.5	46.7		9.5		30.5	21.3		9.5		59.9	10.5		9.5		54.0	26.4	
9.5	8	1.5	34.0		9.4		18.0	43.8	B	9.5		41.0	37.5		9.5	46	2.8	9.5		9.5	54	1.8	15.8	
8.9		17.1	58.6		6.5		23.2	33.6	K	9.5		49.3	30.4		9.5		9.9	27.1		9.5		7.2	4.7	B
9.5		33.0	27.4		9.5		29.2	9.5		8.7		50.3	4.1	K	9.4		11.2	31.4		8.2		17.8	17.0	K
9.3		49.5	52.9		9.5		40.5	43.6	B	9.5		51.0	39.0		9.5		27.3	29.2		7.7		23.2	1.6	K
9.2	9	2.0	43.1		9.3		45.6	46.8		9.1	35	42.4	37.7		8.2		31.1	48.2	K	9.5		28.7	14.1	
9.3		3.1	34.5		8.2		49.9	1.2	L	9.0		59.8	15.0	K	8.7		33.6	48.3	K	9.5		30.5	26.7	
8.3		4.3	25.5	L	8.2	21	16.5	18.0	K	9.4	36	14.2	2.5		9.5		35.7	26.3		9.4		43.8	58.1	
9.3		16.6	44.3		9.5		25.3	47.3		9.5		20.8	15.0		9.5		48.0	37.3		9.5		44.5	37.6	
8.1		35.6	28.9	K	8.7		36.1	27.7	K	9.4		50.0	59.6		9.5		51.5	9.8		9.5	55	3.5	45.9	
9.5		52.5	34.6		9.5		49.7	5.5		8.4		50.4	30.4	K	9.4	47	5.9	27.8		9.4		11.3	40.4	
8.2		55.1	15.3	Lb	9.5	22	3.5	54.6		9.4		52.5	45.1		9.5		10.0	57.2		8.8		37.5	5.4	
9.4	10	16.8	46.0		9.5		34.9	55.7		9.5	37	2.7	34.6	B	9.3		12.2	33.2		9.2		39.7	9.3	a
9.5		38.3	27.5		9.2		35.0	42.0	K	8.8		4.4	38.6	K	9.3		37.7	39.4		8.8		54.9	34.0	B
9.5		39.0	33.9		9.2	23	15.1	17.4	R	9.5		25.2	47.8		8.7		39.6	58.0	K	8.5	56	8.5	52.4	L
7.8		42.7	25.6	K	9.2	24	13.2	46.1	K	9.5		27.2	6.0		7.0		46.2	55.0	K	9.5		9.5	32.3	
9.4		43.4	5.7		9.5	25	45.3	5.0		9.2	38	25.4	59.5		9.0		47.8	54.8	B	9.3		16.3	57.5	
9.5		55.1	36.0		9.5		51.8	35.7		9.5	39	19.3	22.7		9.5		54.8	37.5		9.5		16.7	28.2	
9.4		58.4	43.4		9.5	26	1.2	21.6		5.3		30.4	51.1	K	9.4	48	3.4	27.3		9.0		21.4	41.4	K
9.5	11	3.2	48.0		9.3		10.5	49.3		9.2		38.0	58.1		9.5		8.5	32.8		8.6		40.0	0.9	
10pr.		+ 33.83	+ 0.80		10pr.		+ 33.87	+ 0.61		10pr.		+ 33.90	+ 0.41		10pr.		+ 33.92	+ 0.23		10pr.		+ 33.93	+ 0.13	

837a
9.6 | 6 | 16.4 | 25.1 | B

1101—1160				1161—1220				1221—1280				1281—1340				1341—1400			
	5ᵃ—6ᵃ	+13°			6ᵃ	+13°			6ᵃ	+13°			6ᵃ	+13°			6ᵃ	+13°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	56 40.9	39.6		8.9	4 29.4	41.7	K	9.1	14 36.8	54.7		9.5	22 0.4	16.7		9.5	30 23.5	28.0	
9.0	57 5.9	18.5		8.9	34.3	39.4	K	9.5	37.6	28.1		9.3	1.5	9.8	*a*	9.5	28.7	50.0	*a*
9.5	30.1	28.0		9.5	37.8	23.5		9.2	15 12.5	14.5	*b*	8.7	15.6	27.1		9.5	31.4	18.7	
9.1	34.2	26.9	B	9.1	42.5	10.2	*b*	9.5	19.9	49.4		9.5	18.0	53.5		9.0	50.8	6.3	
8.9	53.9	32.8	K*b*	9.1	55.9	31.4	K	9.5	27.8	18.3		9.4	19 8	53.0	B	9.3	54.3	58.0	
9.5	56.4	58.0		9.5	5 13.2	2.6		9.5	33.4	0.5		9.4	41.6	17.0		9.3	55.5	34.7	
9.4	58 5.4	44.5		9.5	50.0	18.9		9.5	40.9	30.3		9.1	43.7	9.5		7.9	31 4.5	48.4	K
9.0	16.5	14.1		9.5	53.6	27.7		9.5	16 4.3	2.9		9.5	23 7.3	44.4		9.5	5.0	28.7	
9.5	30.0	22.0		9.5	6 16.1	33.7		7.7	17.7	5.0	*B*	9.5	16.2	33.3		9.5	7.3	30.7	
9.4	38.7	35.0		9.2	21.8	27.7		9.5	19.1	33.8		9.4	34.0	18.4	*a*	9.5	8.3	43.3	
9.4	41.0	41.1		9.5	25.0	52.9		9.3	23.0	56.5	*a*	9.5	51.1	16.4		8.3	21.4	1.0	K
9.3	50.9	17.1		8.8	35.0	13.9		9.5	23.2	41.0		9.5	53.3	10.3		9.5	21.6	31.6	
9.3	54.7	59.2		6.3	55.2	53.3	L	9.5	34.0	26.2		8.9	55.2	18.9		9.5	31.2	59.0	
9.5	59.2	8.6	*a*	9.2	58.4	4.4		9.5	35.7	16.4		9.0	24 2.0	58.9	K*b*	9.5	31.6	51.3	
8.7	59 0.5	54.5		9.5	7 10.3	0.5		8.8	40.1	5.5		9.5	16.1	9.3		8.9	34.9	1.9	
9.5	1.2	34.0		9.5	22.5	6.8		9.1	40.3	58.5		8.5	11.3	18.1		7.0	40.5	6.6	K
9.2	5.9	32.2		9.5	27.8	17.5		9.5	17 19.8	57.4		9.5	11.8	34.8		9.5	44.7	14.6	
9.3	34.2	54.3		9.5	38.2	29.7		9.3	23.8	45.5		9.4	27.8	38.2		9.5	47.2	35.4	
9.2	46.5	8.8	K	9.0	57.0	57.1	K	9.5	25.6	18.0		9.5	35.2	21.0		9.5	49.0	37.8	
8.8	0 4.3	59.2	K	9.5	8 0.1	38.4		8.5	28.2	20.7		8.9	46.8	8.2		9.5	54.1	49.9	
8.9	12.9	43.6		9.5	10.1	21.8		9.5	29.9	22.1		9.5	56.1	12.0		9.5	54.8	41.8	
9.3	13.0	7.5	*K*	9.1	41.2	32.8		8.8	32.5	55.1		9.4	25 6.6	27.8		9.5	55.1	50.5	
9.0	13.6	56.8	B	8.6	55.9	45.3	K	8.9	50.4	19.9		9.0	9.6	47.3		8.8	32 0.7	10.6	K
7.7	18.1	58.7	K	8.8	9 15.1	25.0		8.8	52.4	41.5		9.0	23.1	8.6		9.5	18.3	35.0	
9.1	26.3	2.9	K	9.5	18.3	33.4	B	9.4	55.3	17.3		9.0	27.8	2.5		9.3	46.8	55.7	B
9.5	36.8	29.2		9.5	32.6	10.0		9.5	57.2	30.8		9.5	34.2	17.8		9.5	50.5	36.2	
9.5	38.4	23.9		8.9	44.5	4.5	K	9.3	18 20.8	9.7		9.2	44.0	36.8	*b*	9.5	33 1.7	32.7	B
9.5	47.9	56.0		8.7	44.8	22.5		9.5	26.7	22.2		9.0	52.9	59.3		9.5	3.3	57.5	
9.5	51.6	33.3		9.2	52.8	2.0		9.1	28.5	59.7		9.3	53.6	10.1		9.5	4.6	11.4	
9.4	52.1	51.6		9.3	10 28.0	44.5		7.0	28.6	11.2	L	9.4	57.3	49.3		9.0	5.9	44.9	
9.5	1 12.0	36.1		9.5	34.0	4.8		9.5	53.9	7.6		9.5	26 8.2	29.2		9.5	22.4	50.0	
9.4	13.2	7 6		9.3	35.2	51.1		9.5	19 0.5	47.5		9.0	9.7	15.8		9.3	41.7	15.3	
9.5	18.5	17.9		9.5	39.0	8.8		9.3	5.5	26.6		9.2	19.4	8.5		9.5	42.0	56.6	
9.3	33.5	30.2		8.7	42.1	48.9	K	9.5	19.3	56.3		9.5	19.8	9.6		9.4	44.8	33.0	
8.3	37.4	47.0	K	8.6	11 11.2	49.9	K	9.5	22.4	3.1		9.5	22.2	11.6		9.0	49.0	2.0	
9.0	41.1	52.3	K	8.0	11.5	2.8	*B*	9.5	43.2	21.6		9.5	24.6	53.3		9.4	53.8	11.7	
9.4	45.5	7.4		9.5	13.2	19.4		9.3	48.9	8.0		9.2	37.5	59.5		9.5	54.5	22.4	
9.5	57.9	4.3		9.5	13.9	12.6		9.5	53.8	24.7		9.2	27 1.0	20.6		9.5	34 0.9	28.2	
7.8	2 7.1	50.9	K	7.5	14.6	29.0	K	9.5	57.7	3.1		9.2	5.4	46.8	*a*	9.5	13.5	0.8	
9.5	7.3	59.9		8.5	16.9	30.3	K	9.5	20 0.2	10.9		9.5	19.3	37.7		9.0	36.8	25.4	
9.4	7.7	13.0		9.5	23.7	9.8		9.5	1.6	31.3		8.0	20.5	20.0	L	9.5	50.0	27.7	
9.5	15.0	17.1		9.3	27.4	3.2		9.5	2.5	1.0		9.3	24.7	57.0		8.8	50.8	30.8	K
9.4	15.0	27.2		9.5	12 10.7	48.5		9.5	5.3	55.1		9.5	25.2	10.9		9.3	55.2	46.6	
9.0	16.5	29.5		9.5	11.8	4.4		9.1	7.0	51.0		9.4	27.3	28.1		9.0	55.9	8.8	K
9.5	28.8	4.7		9.2	15.9	9.6	K	9.5	14.1	38.7		9.2	39.5	58.6		9.5	35 21.1	33.2	
9.5	31.3	53.3		9.5	17.4	29.8		8.7	16.0	58.8	K	9.5	40.6	22.7		9.5	21.3	12.3	
7.2	34.7	40.2	K	9.2	19.1	30.9		9.3	26.8	37.5		8.0	42.4	16.5	K	9.5	33.5	10.5	
9.5	54.2	8.8		9.1	22.2	34.5		9.5	33.9	47.2		9.5	45.5	25.2		9.3	35.3	0.6	B
9.5	3 3.5	14.9		9.5	27.8	19.5		9.0	50.0	4.8		7.5	52.3	48.6	L	9.1	38.6	13.3	K
9.5	11.8	37.1		9.5	29.0	20.6		9.3	51.1	37.9		9.3	28 50.1	3.3		5.1	48.4	22.4	K
6.5	16.4	39.7	K	9.5	40.4	45.1		9.5	56.3	52.6		9.3	52.2	24.7		9.5	36 21.3	51.0	
9.4	16.9	41.1		9.5	51.3	58.3		9.5	59.7	8.5		9.5	29 11.6	44.8		9.1	44.0	53.8	8
9.5	21.0	16.6		9.5	13 1.2	43.8		9.0	21 2.6	22.7		9.5	27.5	21.2		8.8	54.7	53.4	K
9.5	26.8	51.4		9.5	7.0	9.5	*a*	9.1	8.0	50.5		9.5	28.5	17.9		9.5	37 0.0	54.3	
9.5	32.9	33.5		9.5	11.6	32.7		8.5	12.1	43.1	K	9.1	30.7	55.0		8.5	3.8	28.8	K
9.3	39.6	8.0		9.5	34.9	20.8		9.2	15.5	55.0		9.5	32.4	13.0		3.7	9.6	2.7	K
8.6	51.6	58.4		9.0	57.5	59.2		9.3	26.2	22.9	*a*	9.5	34.0	33.1		9.5	20.1	29.3	
8.1	4 1.5	42.8	K	9.3	14 4.0	6.0		9.5	44.7	29.1		9.5	53.9	23.4		9.5	21.6	57.3	
9.3	4.5	41.3	K	9.0	13.7	11.5		8.0	45.9	42.3	K	9.5	54.8	30.8		9.3	22.5	55.8	B
9.5	18.7	27.4		9.4	34.4	38.3		9.0	49.5	11.3	B	9.5	30 13.7	53.1		9.5	33.2	38.1	
10pr.		+ 33.93	— 0.02	*10pr.*		+ 33.93	— 0.16	*10pr.*		+ 33.92	— 0.27	*10pr.*		+ 33.91	— 0.38	*10pr.*		+ 33.89	— 0.48

1401—1460					1461—1520					1521—1580					1581—1640					1641—1700				
	6ʰ		+13°			6ʰ		+13°			6ʰ–7ʰ		+13°			7ʰ		+13°			7ʰ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	37	34.9	44.9		9.3	46	27.2	59.8	*a*	9.5	53	48.5	35.6		9.5	3	37.9	14.6		7.8	13	11.7	26.3	K
9.5		37.1	22.6		5.3		27.7	21.8	*Lb*	9.5		50.1	56.0		9.5		43.3	13.2		9.5		16.0	52.9	
9.5		56.0	16.4		9.5		28.1	40.4		9.3		59.0	40.3		9.2		46.8	16.8		9.4		17.0	47.3	
9.5		57.8	46.6		9.4		31.6	7.4		9.5	54	3.0	29.3		9.4		55.1	52.5		9.5		43.2	49.3	
9.2	38	17.5	5.7		9.4		39.5	32.4		9.5		6.8	36.5		9.5	4	3.7	35.1		9.3		44.0	40.9	
9.1		22.6	48.4		9.5		39.7	33.1		9.5		15.1	23.1		9.5		16.0	42.8		9.5		47.4	12.0	
9.5		33.7	42.1		9.5		40.3	24.7		8.5		26.7	58.8		9.2		17.9	41.3		9.5		59.7	37.1	
9.1		36.7	27.0	*b*	9.5		52.7	20.2	B	9.3		33.2	33.0		9.0		31.2	5.9		9.5	14	15.2	26.0	
9.3		46.2	54.2		9.0		55.5	15.0		9.5		34.8	18.5		9.5		44.3	40.2		9.2		18.9	59.5	
9.3		55.9	1.4		9.0	47	3.6	57.7		9.1		39.7	54.5		9.5		45.1	47.9		9.5		22.5	25.6	
9.5	39	26.2	0.5		9.4		4.6	24.3		8.0		41.0	17.7	K	9.5		46.6	16.0		9.5		39.2	47.9	
9.5		34.4	15.9		9.2		12.2	59.3		9.5		45.8	49.1		9.5	5	0.6	15.1		9.0		41.7	36.5	
9.4		50.8	23.2		9.5		13.3	5.6		9.5	55	0.0	24.6		9.4		22.2	38.2		9.5		53.1	2.4	
9.5		55.2	42.5		9.4		19.7	0.0		8.8		0.2	10.5	K	9.3		23.0	29.7		9.4	15	20.0	20.9	
9.5		56.1	59.2		9.5		35.8	31.8		9.2		22.3	16.5		9.1		23.1	19.0		8.4		39.8	14.6	K
8.9	40	5.7	59.2		9.5		42.4	0.2		9.0		46.9	10.5	K	9.0		23.7	32.1		9.5	16	13.2	13.8	
9.5		9.2	11.2		9.3		47.1	36.3		9.5	56	27.0	51.5		9.1		27.0	42.0	K	9.5		26.0	6.4	
9.4		10.2	11.7		9.5	48	4.3	11.0		9.5		27.1	22.1		9.5		54.0	29.9		9.5		29.1	36.0	
9.5		38.5	47.9		9.3		16.4	47.4		9.5		27.9	18.6		9.5	6	7.5	43.2		9.5		33.7	23.8	
9.5		47.8	9.7		9.5		31.5	1.5		9.0		37.8	27.1		9.5		7.9	47.1		9.0	17	10.2	44.5	
9.0		57.1	31.3		9.5		38.6	48.1		9.5		39.7	50.6		9.4		11.3	3.6		9.3		21.8	4.7	
9.5	41	8.9	59.1		8.8		39.3	51.4		9.5		54.9	38.6		9.5		16.7	23.6		9.3		22.2	14.2	
8.5		13.0	53.7		9.5		40.0	44.5		9.4	57	7.0	22.0		9.3		35.0	50.2		8.0		24.7	21.8	L
8.8		18.2	14.5		9.5		44.1	32.0		8.3		16.5	50.0		9.5		41.2	21.7		9.5		49.1	1.0	
9.4		23.3	48.1		9.5		50.8	16.7		9.4		17.1	24.1		9.2		56.6	59.2		9.5		58.7	28.1	
9.5		25.2	9.8		9.5		54.0	49.6		8.6		23.8	31.9		8.4	7	0.3	0.7		9.5	18	13.8	4.4	
8.4		26.5	20.9		9.4		55.0	44.8		7.7		24.2	55.1	*B*	9.0		16.9	2.5		9.4		14.7	9.8	
9.5		28.3	3.1		9.2		57.4	2.5	*b*	9.3		40.9	54.7		9.5		23.5	48.7		9.2		42.5	9.1	
9.1		31.0	48.9		9.2	49	9.7	58.8		9.4		50.3	26.4	*a*	9.5		44.8	1.7		9.2		45.0	38.2	
8.5		42.9	56.7		9.5		26.3	27.8		9.5		53.8	17.7		9.3		51.0	2.2		9.4		54.0	53.2	
9.2		50.0	3.5		9.5		37.6	45.8		9.5	58	1.2	2.5		9.5	8	4.9	33.4		9.5		58.8	29.8	
9.4		58.4	20.1		9.5		57.5	11.2		9.5		5.9	33.0		9.5		29.5	29.2		9.5	19	16.4	54.8	
9.5	42	14.5	18.3		9.5	50	2.1	16.5		9.5		32.4	8.2		9.2		50.0	28.7		9.3		17.0	49.0	
6.6		14.4	34.5	*Lb*	9.0		4.1	15.9	*B*	9.3		43.0	35.6		9.5		52.6	47.8		9.3		20.5	19.0	
8.9		33.9	56.9	K	8.5		8.0	27.1		9.2		47.4	25.9	K	9.3		53.5	58.1		9.3		22.3	12.8	
9.4		40.6	15.3		9.4		12.7	29.8	*a*	8.2		47.5	37.3	K	9.5		54.1	6.4		9.3		29.2	24.6	
9.5		56.3	23.4		9.5		13.0	45.4		9.1		56.6	21.0		9.2		57.7	38.3		9.1		56.7	22.9	*b*
9.1		56.5	59.1		9.5		27.5	13.4		9.3	59	4.7	28.0		8.9	9	8.7	49.6		8.9	20	8.0	53.9	K
9.5	43	19.1	15.0		9.5		40.0	40.5		9.5		12.0	40.7		9.5		9.9	5.4		9.2		24.7	14.5	
9.2		22.0	47.1	K	9.5		43.2	40.6		9.5		33.6	16.0		8.8		18.2	44.7	K	8.6		34.1	54.1	K
9.5		22.0	4.4		9.5		44.9	50.2		9.2	0	9.6	47.4		9.5		19.8	47.5		9.3		48.4	59.9	
9.5		25.9	3.4		8.9		56.0	53.7		9.3		10.8	53.5		9.5		20.2	50.0		8.7	21	3.6	10.5	K
9.4		52.1	20.8	K	9.0	51	8.4	10.1		9.5		23.0	30.0		9.0		22.7	38.5	K	7.1		4.5	3.2	K
9.1		53.1	21.0	K	9.4		18.0	19.4		9.4		32.1	59.3		9.5	10	7.6	26.6		8.3		11.1	49.2	K
8.8	44	6.0	25.5	K	9.5		29.6	33.8		9.5		38.1	42.0		9.1		13.8	20.1	*b*	9.3		45.7	50.0	
9.4		6.8	38.5		9.5		32.1	40.0		9.5		39.8	15.7		7.7		36.5	47.1	K	9.2		50.2	13.5	
9.5		15.2	36.9		9.5		51.7	36.6		9.4	1	1.7	22.7		8.9		47.0	53.5	K	9.5		56.6	24.5	
9.5		28.3	50.8		9.1		53.4	40.4	*b*	9.3		3.8	52.7		9.5		51.8	18.3		9.3	22	3.2	50.0	
9.3		34.7	40.8		9.5		54.0	21.0		9.4		11.6	50.8		9.5		53.9	39.3		9.2		7.4	26.2	
9.5		38.5	20.8		9.3	52	3.3	14.8		8.7		20.3	53.0	K	9.5	11	9.9	31.2		9.5		14.3	43.5	
9.5		51.4	35.8		9.2		11.3	28.9		8.7		40.4	11.7	K	9.2		12.6	48.4	K	9.5		35.8	0.2	
9.5	45	6.6	53.7		9.5		18.5	57.0		7.5		44.7	22.4	K	8.9		29.1	58.5		9.4		45.0	25.3	
9.2		29.9	31.9	*a*	9.5		19.6	15.8		9.5	2	20.2	41.4		9.3		37.5	17.0		9.5		45.7	33.2	
9.2		31.4	12.5		9.0		40.3	54.6		8.7		20.2	35.3	K	8.5		39.3	37.7	S	9.2	23	2.7	14.2	
9.5		40.7	19.5		9.5	53	7.8	56.6		9.5		53.8	15.2		9.0		42.2	23.5		8.7		14.9	4.4	
9.3		42.9	10.5		9.5		16.2	40.6		9.5	3	7.6	31.0		9.5		54.4	53.7		9.3		34.6	6.6	
9.4		42.7	58.8		9.5		16.7	23.3		8.9		8.7	36.2	K	8.0	12	53.7	21.3	K	9.3	24	3.7	30.2	
9.0		44.8	33.5		9.2		24.2	20.9	K	9.5		15.6	34.5		9.3		58.0	17.2		9.5		27.3	41.6	
9.5		50.0	36.1		9.2		27.0	57.1		9.2		24.5	16.4		9.1	13	5.7	19.0		9.1		54.2	29.4	K
9.5		58.9	39.0		9.1		33.9	22.7	K	9.5		31.4	0.8		8.8		10.1	7.2	K	9.5		57.7	16.6	
		+	—				+	—				+	—				+	—				+	—	
10pr.		*33.87*	*0.61*		*10pr.*		*33.85*	*0.71*		*10pr.*		*33.83*	*0.84*		*10pr.*		*33.79*	*0.98*		*10pr.*		*33.74*	*1.13*	

1653 a			
var	15	2	21.9

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	7h		+13°			7h		+13°			7h—8h		+13°			8h		+13°			8h		+13°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
9.4	25	32.2	39.9		9.0	39	11.2	10.0	R	9.3	53	40.2	30.0		9.4	9	20.2	16.2		9.4	26	8.1	5.8	R
8.3		39.7	43.3	K	9.2		11.8	56.4		9.4	54	26.6	56.2		9.3		32.8	56.0		9.5		24.9	22.8	
9.3	26	7.2	13.4		9.2		39.0	27.7	K	9.0		26.7	13.5		9.5		52.7	22.8		9.5		48.2	48.7	
9.5		8.5	21.7		9.0		40.6	1.2		8.5		52.7	20.7	K	9.5	10	7.6	18.2		9.1	27	6.1	20.3	b
9.0		12.7	34.0		9.5		51.4	16.6		9.5	55	4.1	27.1		9.5		9.8	59.0		9.5		32.2	17.1	
9.5		18.8	33.2		9.5		55.9	49.3		9.2		43.5	5.8		9.1		19.7	0.3	b	9.5		40.9	9.5	
8.8		47.9	20.5	K	9.5	40	0.8	5.8		9.5		46.7	4.0		9.3		42.2	38.4		9.3	28	4.1	46.0	K
9.4		52.3	38.3		9.5		5.4	44.4		8.5	56	24.0	49.5	K	9.4	11	17.2	5.9	B	9.5		30.1	57.9	
9.5	27	35.0	2.4		9.4		12.9	18.0		9.5		47.4	44.8		9.4		26.0	6.2	B	9.5	29	8.2	34.2	
9.0		39.8	10.7	K	8.9		16.5	46.4	Kb	9.5		56.4	5.8		9.5		40.7	18.6		9.4		35.4	58.2	
9.5	28	13.7	31.6		9.5		32.4	7.8		5.8		59.9	32.2	Kb	9.1	12	2.7	43.5	K	9.5		52.8	1.0	
9.1		21.2	14.1	K	6.5		54.8	43.7	K	7.7	57	27.3	54.9	K	9.0		12.6	42.9	K	9.4	30	19.2	46.0	
9.1		39.1	41.3	b	9.2	41	5.4	14.1		9.5		37.7	0.5		9.5		18.2	58.8		9.0		22.7	27.0	
8.1		39.7	10.0	K	9.5		21.5	37.5		9.5	58	4.1	33.0		9.4		54.1	12.3		9.5		43.1	29.4	a
9.5		53.9	11.8		7.5		28.0	9.4	Lb	9.5		7.2	53.0		9.2		57.8	7.3		9.5		46.3	13.2	
9.3	29	16.2	16.6	a	9.3		31.8	31.8		9.4		42.7	28.9		9.5		57.9	39.7		8.5	31	15.7	27.7	K
9.5		32.7	28.8		8.8		35.3	33.4		9.5	59	7.4	44.0		9.3	13	4.2	12.8	a	9.5		23.3	58.5	B
9.5		33.7	48.6		9.5		35.6	6.8		9.2		13.7	41.6		9.5		24.6	25.3		9.5		33.1	51.9	
9.5		49.0	39.2		9.5		38.7	4.6		9.5		20.3	53.4		8.3		27.2	16.6	K	9.4		45.2	32.5	
9.5		49.3	42.4		9.3	42	57.1	34.5		9.1		37.8	2.6	K	9.5		54.7	31.1		9.3	32	18.1	50.9	
9.1		53.5	7.6	b	9.0	43	43.4	52.5	Rb	9.5		51.7	23.0		9.5	14	1.7	43.7		9.1		28.7	18.9	
9.0	30	34.6	21.8	K	9.5	44	1.2	57.8		8.0	0	18.7	34.1	L	9.5		2.1	50.2	B	9.5		33.9	20.0	
9.5		42.1	29.9		9.5		16.8	3.5		9.0		22.1	10.5		9.1		3.9	35.3	K	9.1		53.6	38.3	K
9.3		44.0	58.2		9.3	45	5.9	24.0		8.8		44.4	22.9	L	9.4		4.9	37.4	B	9.5	33	2.5	27.7	B
8.9	31	32.0	12.8	K	8.7		14.8	4.2	K	9.1		47.2	17.3	B	9.3		23.4	35.6	a	9.5		15.7	7.6	
9.5		36.2	48.0		9.5		18.9	15.9		9.3	1	13.7	16.0		9.5		44.1	11.3		8.9		16.1	43.7	K
9.2		38.7	25.3		8.5		23.4	3.2	K	9.5		17.7	56.6		9.5		56.6	31.9		9.0		50.2	34.2	B
9.3	32	7.7	52.3		9.1		32.4	6.8	K	9.4		29.8	12.1		9.5	15	39.2	9.0		9.4	34	15.9	7.2	
9.2		9.8	7.9		9.5		48.8	7.9		8.5		49.3	6.8	K	8.8	16	16.1	57.2	Kb	9.0		17.8	53.2	K
9.5		12.7	54.2		8.3	46	4.8	57.5	K	9.5		53.7	50.7		9.5	17	3.4	56.3		9.3		22.4	8.4	
9.5		29.2	52.5		8.0		7.5	48.2	K	8.5		53.8	27.0	K	9.3	18	31.1	33.9		9.5		53.3	54.7	
9.0		33.7	25.0		9.4	47	5.8	55.4	B	8.5		57.1	16.6	K	5.8		43.6	7.3	Kb	6.0	35	13.2	12.4	Kb
9.3		58.2	33.4		8.5		12.4	40.6	K	9.5	2	4.0	40.6	a	9.5		49.3	2.2		9.5		38.4	51.0	
9.5	33	8.1	35.8		9.3		16.9	39.5		9.3		8.6	4.3		9.3		58.1	59.7		9.1	36	29.2	14.2	
9.0		39.3	56.7	L	9.5		26.9	12.3		9.2		19.2	13.2	K	9.5	19	5.7	44.6		9.5		34.1	49.8	
9.5		46.3	40.9		9.2		34.2	3.0		9.4		49.1	25.4		9.4		12.6	31.7		9.5		38.7	51.9	
6.5		46.4	49.5	K	8.2		39.4	43.6	K	9.5		58.4	17.3		9.5		31.4	42.1	B	9.2		43.6	37.0	
9.5		49.8	2.1		9.5		52.4	8.3		9.4	3	12.7	53.9	a	8.5		32.9	14.6	L	9.5	37	10.7	28.3	
9.5		59.0	7.7		9.5		56.9	15.0		7.7		45.0	53.1	K	9.3		40.6	14.6		9.0		17.6	47.0	
9.0	34	4.6	40.5		8.4	48	5.1	2.0	K	9.0		51.2	49.4	K	9.4		42.2	10.2	B	9.1		42.7	21.4	b
8.9		21.0	34.2	K	8.5	49	7.0	47.7	K	9.5		53.4	15.6		9.5		50.0	27.2	B	8.7		58.7	47.1	K
9.5		24.5	39.7		7.8		13.8	38.8	Kb	9.4	4	22.3	56.8	B	9.5		53.3	31.4	B	9.5	38	31.4	2.1	
9.3		50.5	30.4		9.5		15.9	15.8		9.5		47.4	25.7		9.5	20	10.0	36.7		9.5		53.1	36.6	
9.5		52.3	57.4		8.0		17.4	34.6	K	9.5	5	2.7	41.7		9.5		28.2	54.7		9.4		59.5	9.1	B
9.0		52.6	46.9	L	9.5		40.1	19.3		9.3		50.1	33.0		8.2	21	8.4	1.9	K	9.4	39	2.6	46.7	
9.4	35	2.9	44.8		9.5		49.4	47.0		9.5	6	1.4	57.2		9.3		20.1	45.7		9.5		4.0	7.0	
9.3		29.9	43.4		8.0	50	5.0	42.7	K	9.5		7.7	15.9		8.7		22.1	36.0	K	9.4		10.2	43.6	
9.0		35.4	19.0		9.3		10.6	44.0	B	7.2		17.0	30.0	K	9.5	22	20.7	19.6		9.4		12.2	9.6	B
9.3		47.9	26.7		9.3	51	15.4	16.1		9.4		22.0	8.4		9.5		41.4	11.1		9.5		14.3	8.0	B
7.0	36	10.4	12.7	K	8.8		31.0	23.1	L	9.0		35.9	27.3	Kb	9.1		43.2	47.7	K	9.2		43.8	57.6	b
8.7		14.9	9.6	K	6.5		31.8	36.9	L	9.5		41.8	56.3		9.0		53.6	30.4	L	9.1		46.7	25.1	K
9.5		42.8	36.0		9.0		43.9	53.5		9.5		55.1	54.7		9.5		59.0	39.1	B	9.2	40	29.6	49.1	
9.5		50.9	13.4		9.5		50.6	16.7	B	9.4	7	35.7	41.8		9.3	23	3.5	12.1		9.3		38.7	12.3	K
9.5	37	22.6	2.8		9.5	52	10.6	50.9		9.5		38.6	11.0		9.5		17.0	17.3		7.2		42.2	4.8	K
9.5	38	4.2	0.3		9.5		23.3	41.0		9.0		53 6	17.9	K	8.8		29.1	14.1	K	8.2		47.4	7.0	K
9.5		8.9	53.8		7.3		32 5	2.1	K	8.9	8	14.6	36.6	K	7.8	24	10.6	15.9	K	9.4	41	48.6	15.8	
9.5		27.3	59.1		7.4		45.4	3.9	K	9.5		21.2	32.1		8.5		21.7	43.2	K	9.5	42	6.4	5.2	
9.5		29.0	48.6		9.5	53	18.3	52.6		9.3		52.8	58.6	a	9.5	25	14.7	29.4		9.4		24.9	27.6	
9.5		41.9	7.5		9.4		33.6	33.5		9.0	9	1.1	11.0		9.3		19.6	47.8		9.0		52.1	31.1	K
9.0	39	10.9	33.9		9.0		36.7	9.6		9.4		15.4	4.4		6.8		43.4	45.1	K	9.4		59.3	9.8	K
10pr.		+	33.68	— 1.31	*10pr.*		+	33.59	— 1.49	*10pr.*		+	33.49	— 1.69	*10pr.*		+	33.37	— 1.89	*10pr.*		+	33.23	— 2.09

1718 a.

9.5	29	37.8	27.0	a

2001—2060					2061—2120					2121—2180					2181—2240					2241—2300				
	8ᵐ—9ᵐ		+13°			9ᵐ		+13°			9ᵐ		+13°			9ᵐ—10ᵐ		+13°			10ᵐ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	43	3.8	4.7		9.5	7	50.3	46.9		9.5	28	24.4	56.8		9.5	49	47.9	17.8		9.5	12	23.9	4.0	
9.5		43.7	21.8		9.5	8	31.6	32.5		9.2	29	1.4	8.8	B	9.0		56.5	6.7	L	9.5		43.2	27.1	
9.2		57.9	41.9	K	9.5		47.4	41.3		9.5		10.0	10.3		5.5	50	26.9	7.2	K	9.5	13	10.5	13.6	
8.8	44	2.5	56.3		9.5		59.3	3.3		9.5		29.5	8.3		8.7		33.1	30.3	B	9.0	14	18.9	9.3	Kb
9.5		14.9	12.4		9.5	9	9.6	14.2		9.2		31.2	6.6		9.5		38.7	55.5	B	9.5		45.5	33.9	B
9.2		24.1	48.2		8.7		25.6	40.8	K	9.3		52.1	7.2		9.3	51	49.6	36.4	B	9.5		55.8	34.1	B
8.3		25.3	46.3	aK	9.5	10	6.7	36.7		9.4	30	1.5	1.9		9.5		55.2	35.4	B	9.5	15	11.3	12.9	
9.5	45	4.6	53.1		9.5		25.5	41.0		6.8		25.3	22.5	K	9.5	52	20.0	18.6		9.4	16	16.2	41.6	
9.1		56.8	51.6		9.3		42.7	43.9	K	9.5	31	5.8	20.8		9.5		20.5	43.4		9.5		42.1	59.9	b
9.5	46	17.2	12.0	b	9.3	11	46.3	46.5		9.5		14.8	48.4		9.5	53	4.0	27.1		9.5		50.4	48.5	
9.5		51.8	49.0		9.0		52.2	32.1	K	7.0		25.1	58.0	K	9.5		30.6	28.1		9.2	17	8.6	59.7	b
9.4	47	30.3	54.9		9.3		52.3	20.5	K	9.0		26.0	4.5		9.3		30.6	22.8		8.0		15.6	28.5	K
9.2	48	47.1	49.8	b	9.5	12	0.3	11.3		9.5		55.0	41.0		9.5	54	3.0	47.7	B	9.3		52.2	43.1	K
9.5	49	21.0	1.3		7.0	13	23.8	43.2	K	9.5	32	4.5	53.6		8.5		16.8	35.1	L	8.5	18	20.8	53.7	K
9.0		44.2	0.5		9.5		30.2	12.3		9.5		38.3	38.8	B	9.5	55	17.0	31.5		9.4		46.3	9.2	
9.4		49.9	58.1		9.5		40.1	11.3		6.9		42.7	42.7	K	9.2		23.6	32.9	R	8.1		56.6	12.5	K
9.4	50	6.1	3.1		9.5		54.6	48.8		9.5	33	1.3	21.6	B	8.5		47.8	34.7	R	9.4	19	18.7	54.6	
9.1		47.8	56.4		9.5	14	10.7	52.1		9.4		22.3	10.2		9.5	56	33.7	12.4		8.1		33.1	10.8	K
9.0		58.7	31.8	K	8.7		20.9	11.5	K	8.3		46.7	33.3	K	8.5	57	6.5	33.1	B	9.5		59.6	15.1	
9.0	51	8.7	16.2	K	9.5		54.0	32.8		9.5	34	2.5	3.3		9.5		13.6	16.5	B	9.5	20	6.1	51.2	
7.5		29.4	39.0	K	9.4	15	26.1	50.2		9.5		14.3	56.0		9.5		32.2	31.6		9.0		46.7	54.9	K
9.5		31.1	8.9		9.4	16	1.5	26.3		9.5		20.5	49.3		8.8		39.3	14.0	B	9.4		47.4	29.4	B
9.0	52	18.6	46.4		9.0		25.7	8.5	K	9.3		37.8	41.3		8.9		51.3	40.7	Kb	9.5		57.3	21.3	
9.5		24.7	33.2		9.5		26.2	12.0		9.5	35	0.1	7.9		9.3	58	7.9	0.9		9.5	21	13.8	25.9	
9.5		30.9	54.6		9.5		42.2	44.1	B	9.0		29.8	15.3		9.5		25.0	5.5		8.9		29.9	54.7	
9.4		36.0	42.2		9.5	17	57.4	31.5		9.5		31.0	40.3		7.3		49.8	29.5	K	9.5		31.3	20.6	
9.1		44.6	30.4	K	9.5	18	13.1	35.8		9.0	36	13.3	12.4		9.5	59	38.3	59.1		9.5		38.3	39.3	
8.1		52.6	7.9	K	9.5		16.0	27.7		9.5		34.0	4.8	a	8.0		48.4	43.7	K	9.5	22	24.6	16.4	
9.4		59.9	43.1		9.1		49.6	7.2	b	9.4		47.1	7.8		9.5	0	13.6	20.7		9.5	23	51.2	21.0	
9.1	53	6.6	5.6	K	9.5	19	14.3	10.0		9.4	37	29.6	55.8	K	9.5		24.5	37.8		9.5		58.0	31.2	
9.5	54	59.8	2.9		7.8		43.9	1.4	K	9.3		41.3	8.0		9.5		24.8	31.4		8.0	24	35.0	40.3	K
9.4	55	42.7	50.5		9.5	20	5.6	38.8		9.5	38	18.2	6.8		9.0		48.5	51.4		9.0		51.1	28.9	K
9.5		48.2	28.3		9.5		10.0	31.1		9.0		42.3	3.5		9.4		56.6	42.3		9.5	25	56.7	52.4	
9.4	56	10.7	48.8		7.5		34.6	17.2	K	9.3		54.8	46.2		9.5	1	0.0	52.7		7.8	26	25.3	7.5	K
9.4		17.6	47.1		9.5		35.8	9.7		9.2	39	4.3	44.7		9.5		12.3	27.0		9.5		27.0	41.1	
7.8	57	0.5	54.6	K	7.2		41.6	1.2	K	9.0		33.3	38.8		9.5		50.8	11.7		9.5		59.2	56.9	
9.3		31.7	20.0	b	7.5		56.6	12.6	K	9.5		54.0	20.7		9.1	2	47.5	38.0	Bb	9.5	27	39.6	21.7	
9.5		58.4	2.1		8.3	21	58.6	59.6	Kb	9.5	40	16.6	12.9		9.5		48.2	12.4		9.5		48.0	4.7	
9.4	58	36.9	36.9		8.5	22	22.3	28.3		9.4		40.9	8.4		9.5	4	5.8	13.1		9.5	28	1.6	44.1	
8.8		48.3	49.2		8.0		30.8	34.7	L	8.8	41	1.8	11.3	K	9.4		13.3	11.1	B	7.3	29	20.8	36.8	K
9.5		55.4	2.8		9.5	23	17.3	16.2		9.5		9.8	17.6		9.3		16.8	55.9		8.7		52.8	6.3	L
9.4		58.6	17.1	B	9.5		18.9	8.8		9.5		38.9	30.8		9.5	5	19.3	28.4	b	9.3	30	47.0	9.3	
9.5	59	3.3	39.4		9.5		20.8	36.8		9.5		46.3	37.7		9.5		43.0	47.9		9.0	31	4.0	32.5	
9.1		43.2	18.3	K	7.0		25.3	29.7	K	6.5	43	12.0	45.2	Kb	9.5	6	35.3	12.9		8.5		6.0	30.4	L
9.0	0	29.2	48.4	K	9.5		30.0	45.2		9.5		32.0	50.1		9.5	7	1.0	44.5		9.4		30.2	1.3	B
9.5		55.1	41.2		9.4		49.3	59.6	B	8.9		42.4	19.7	K	9.5		21.3	54.2		9.4		30.3	17.2	
9.5	1	2.6	40.6		9.5	24	14.0	38.5		9.4	44	3.1	10.7		9.5		57.8	25.7		8.7		45.2	4.3	
8.3		33.9	55.7	Kb	9.4	25	24.3	6.5		9.3		8.4	57.2		9.5	8	26.9	4.1		9.5	33	7.6	15.3	
9.2	2	25.3	56.4		9.5		34.3	27.7		9.5		20.0	21.5		9.5	9	6.4	56.9		9.1		36.0	41.3	
9.0		52.4	8.4		9.5		43.3	36.8		9.5		35.0	22.2		8.5		9.8	38.2	K	8.6	34	1.0	37.5	K
8.5	3	30.1	27.8	K	9.5		53.6	34.6		9.5		48.9	3.4		9.5		12.9	29.4	B	9.5		9.1	46.2	
9.5		45.0	55.7		9.5	26	2.0	23.5		9.5	47	2.8	42.3		8.9		40.7	1.0		8.4		35.0	10.4	K
9.5	4	37.2	15.1		9.5		17.0	7.4		9.5		18.0	18.8		8.3		58.2	50.8		9.5	35	27.0	23.4	
9.5	5	29.3	8.8		9.5		44.0	40.0		9.5		19.3	5.5		9.1	10	1.0	37.1	K	9.0		27.5	13.7	K
9.5		31.7	33.3		9.0		51.4	56.3	K	9.5		35.7	13.3	B	9.4		28.5	27.0		9.0	36	38.0	44.6	K
9.4		58.7	42.8		9.5		55.8	34.7		9.5		46.8	43.3		8.9		38.5	29.7	K	9.3	37	15.2	52.7	
9.5	6	31.2	13.3		6.5	27	8.7	18.0	L	9.5	48	2.0	15.3		7.5		40.3	21.1	K	9.4		51.0	39.3	
9.5		54.0	32.6		8.7		24.3	12.0	L	9.1		29.0	30.7	b	8.4		49.9	31.2	K	9.2		55.5	54.1	K
9.4	7	4.1	28.7	Bb	9.0	28	18.3	20.0	K	9.5		45.5	28.0		8.6	11	12.9	0.7	K	9.1		58.0	13.4	b
9.5		5.5	28.9	B	9.5		22.6	13.0		9.5	49	19.6	50.7		9.5		36.0	59.7		9.4		58.7	59.5	
		+	—				+	—				+	—				+	—				+	—	
10pr.		33.05	2.30		10pr.		32.79	2.56		10pr.		32.59	2.72		10pr.		32.33	2.89		10pr.		32.02	3.06	

2301—2360					2361—2420					2421—2480					2481—2540					2541—2600				
	10ʰ—11ʰ		+13°			11ʰ		+13°			11ʰ		+13°			11ʰ—12ʰ		+13°			12ʰ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	38	0.6	31.8		9.5	1	9.6	5.3		9.4	23	36.6	50.1		8.6	53	37.6	48.5	L	9.5	21	56.4	17.3	
6.5		39.5	30.4	L	9.4		29.5	53.9	α	9.5	24	16.8	3.6		7.2		48.6	11.0	K	9.5	22	16.4	1.6	
9.3		52.1	21.3	B	9.0		36.4	52.7	K	8.2		53.4	0.9	K	9.3	54	28.6	30.8		9.5		27.0	37.0	B
7.7	39	19.5	47.7	B	9.0		47.6	41.7	K	9.3		58.7	46.3		9.5	55	23.7	41.9		9.5		43.3	35.6	
9.5	40	8.5	20.8		8.5	3	4.5	53.4	Kb	9.5	26	37.3	32.5		8.0		29.3	37.7	Kb	8.3	23	29.3	16.9	K
9.0		26.2	58.2		9.5		11.7	25.3	B	9.3	27	9.2	21.3		9.2		53.2	48.9	K	neb		29.7	10.6	
9.5		31.1	40.4		8.8		11.9	1.6		9.5		19.0	53 8		9.3	58	38.8	56.5		9.3	25	4.2	0.1	
9.5	41	8.6	19.5		9.5	4	2.1	42.4	·	9.1		37.3	8.1	B	8.5		58.3	20.0	K	9.5	26	45.0	23.1	B
9.5		33.4	13.0	B	8.4		41.9	59.6	K	8.7		38.7	57.1	K	9.5	59	4.5	50.7		9.5		48.3	57.1	
8.8		40.1	35.9	K	9.1	5	42.5	1.6	ab	8.7		45.2	29.5	K	8.9		6.8	14.1	K	8.7	27	32.7	14.5	K
8.5		56.6	42.4	K	9.0		51.6	19.9		9.0		47.2	22.0	K	7.5		46.3	47.8	K	8.8		48.3	43.3	K
8.7	42	30.0	34.7	K	9.5	6	49.6	31.0		9.3	28	28.0	17.8	K	8.7	0	4.2	28.6	B	9.5	28	19.7	20.8	
9.5		37.5	11.8		8.6	7	6.6	24.7	K	8.7		36.8	39.8	L	9.3		6.3	50.5	α	8.8		39.7	28.0	
9.5	43	5.0	9.9		9.4		23.1	28.9	B	9.2		43.4	25.4	K	8.5		12.3	27.7	K	9.5		44.5	59.1	B
8.3		6.7	2.3	K	9.5		43.5	44.1		9.4	29	9.7	6.2	S	9.5		45.3	24.9		9.3		58.0	49.7	B
9.5		21.9	46.9	B	8.4		47.3	7.4	K	7.0	30	30.6	46.0	K	9.1	1	4.4	55.2		9.3	29	7.0	37.7	
9.5	44	17.1	0.9		9.2		56.5	27.6	K	9.5	31	42.9	54.0		9.0		15.3	35.9	K	9.0		12.3	33.2	
8.4		34.5	52.2	K	7.0	8	21.8	23.9	K	9.5	32	54.3	27.6		9.0		34.3	30.0	K	9.0		14.1	41.9	B
8.5	45	42.5	30.3		6.7		22.8	38.7	K	8.5	33	5.6	36.7	K	9.3	2	48.3	44.3		9.5		23 3	13.4	
7.8		43.4	53.5	K	8.3	9	2.5	14.6		8.6		18.0	53.1	K	9.5		52.7	23.5		neb		32.4	58.6	
9.5	46	14.5	36.3		9.5		19.0	54.5		9.5		32.6	0.9		9.3	3	17.5	5.0		8.0	30	3.7	46.8	K
7.5		39.5	8.8	K	9.4		21.0	52.0	B	9.5	34	33.3	52.3		8.7		44.2	16.5	K	8.5		17.0	28.0	L
9.5		55.6	27.9		9.2	10	4.3	11.8	K	7.0		35.0	6.2	K	8.4	4	34.0	48.2	K	9.0	31	27.3	38.1	
9.5	47	30.0	28.3		8.0		8.8	11.8	K	9.3	35	21.7	20.0	B	9.3		55.7	39.1		9.5	32	9.6	45.3	
9.2		33.2	57.1		9.3		35.0	53.3		9.3	36	6.9	14.7		8.8	5	28.0	41.5	K	9.5		10.9	42.6	B
9.0	48	1.1	19.3		neb	11	21.1	53.2	B	9.3		20.6	24.8		9.3		32.6	56.5		9.3		14.8	2.2	
9.5		28.0	9.2		9.4		49.7	20.1	B	8.8	37	28.7	3.8	L	9.0		42.7	51.6	K	9.0		40.3	25.6	
9.0	50	5.1	29.3	L	9.5	12	25.2	51.8		9.5		42.2	12.3		9.5	6	20.3	25.9		9.3	33	23.3	9.5	
9.4		21.6	34.7	B	9.0		33.0	48.5	B	9.5	38	23.1	1.1		9.5		59.4	19.0		8.2		26.4	30.4	K
9.1		27.0	16.1	b	neb		40.7	47.0		8.8		29.3	26.3		9.5	7	42.0	33.6		9.3	34	54.7	55.6	
9.5		36.5	11.9		8.5	13	32.7	20.6	Kb	9.5		30.8	8.3		9.5		49.1	56.3	B	8.8	35	47.4	15.3	K
9.5		58.6	30.6		9.3		47.6	1.0		9.1		36.3	47.8	b	9.3	8	16.7	16.8		9.0		50.8	32.9	
9.5	51	40.0	10.9		9.5	14	3.3	58.8		9.3		40.9	7.2		9.5		31.9	55.6		9.3	36	27.1	55.6	
9.4		52.1	35.2		9.5		23.8	11.6		8.0	39	46.7	28.2	B	9.0	9	7.3	18.6		9.0	37	15.0	39.1	
9.5	52	4.3	7.1		9.5		29.7	27.2		8.5	40	20.3	45.0	K	8.8		24.7	20.4	K	9.4		39.0	22.1	
9.5		6 5	22.9		9.0	15	5.8	35.9		9.5		51.7	54.2		9.3	10	22.7	46.0		9.3		48.0	40.9	
9.5		36.4	10.5	Rb	9.3		10.2	24.0		9.3	41	29.9	5.0		9.1		34.7	18.6	α	9.1	38	4.0	42.5	
9.5		41.7	58.0		9.5		36.0	50.8		8.8		35.8	0.6	K	9.3		46.6	38.1		8.9		52.7	22.0	
9.5		59.6	3.3		8.7		56.7	37.9	K	9.5		51.9	30.7		9.0		59.4	16.5		9.3	39	1.6	52.1	
9.0	54	16.5	25.5		9.3	16	24.7	58.8		9.2	42	6.6	33.6	K	9.5	11	32.3	48.8		8.4		18.3	44.3	K
9.1		43.0	10.5	b	8.7		36.8	16.0	K	9.5		15.7	1.6		9.3		39.0	42.2		9.5	40	15.7	51.4	
9.5		52.1	45.9		8.8		58.7	34.1	K	9.5		29.9	55.7		9.5	13	6.9	6.3	B	8.8		19.1	19.9	
9.5	55	10.1	5.7		9.0	17	16.7	7.1	K	8.3		46.3	48.9	K	9.3	14	4.1	28.7	α	8.8		40.1	4.4	
9 5		15.0	40.7		8.2		30.6	48.4	L	9.5		52.6	45.0		9.2		11.4	16.5	R	8.5		4.1	24.5	
8.7		41.5	56.1	K	8.7	18	26.7	1.1	K	6.2	43	28.6	5.3	K	9.5		45.7	14.5		9.5		49.5	52.6	B
9.5		59.6	52.5		9.2		41.6	51.2		9.2		32.4	18.2	B	8.7	15	43.4	30.3	R	9.3		51.6	4.0	
9.5	56	52.0	13.6		9.1	19	10.8	31.3	K	9.5	44	28.9	31.1		9.2		50.9	54.3	b	9.5	41	21.3	49.0	
6.5		56.1	27.5	K	9.5		20.2	50.5		9.5		33.6	13.8		9.0		59.1	27.0	B	8.8		21.6	27.0	
9.5	57	20.7	17.5	B	9.5		41.2	54.4		9.3		53.0	41.5		9.4	16	3.8	39.3	B	9.2		48.1	26.6	
7.8	58	14.3	21.0	K	9.5	20	13.3	26.5		9.3	46	46.5	21.8	b	*9.3	17	10.9	41.4	B	9.3	42	56.5	5.4	
8.6		18.6	10 6	K	8.7		32.1	59.5	Kb	9.5	47	52.7	53.5		neb		41.7	40.9		9.5		56.8	21.1	
8.5		30.6	35.1	K	9.5		39.6	54.9		9.5	48	33.2	51.4		9.3		57.2	57.5	Bb	9.1	43	7.6	13.7	K
9.3		39.8	1.6		9.3		48.3	29.8	B	8.7	49	6.3	9.5	K	neb	18	53.1	42.6		9.4		10.9	33.6	B
8.2		55.3	29.6	K	9.5		58.8	12.6		9.5		17.6	24.1		9.5	19	5.3	25.9		8.3		17.6	21.3	K
9.5	59	12.6	19.3		8.7	21	5.7	41.8	K	9.2		21.6	2.2		9.4	20	9.0	33.5	B	9.2		25.1	28.4	K
9.2		31.2	56.4	K	9.3		55.7	14.1	K	9.3		46.6	45.3	K	8.5		17.2	1.1	K	8.3	44	6.9	9.6	K
9.5		37.0	5.0		9.0		56.3	47.3	K	9.5	50	37.3	41.9		9.5		23.4	49.1		9.0		47.6	52.2	
7.5		50.1	48.3	K	9.5	22	0.8	31.0		9.3	51	12.9	39.4	α	9.5		44.0	17.2		9.3		49.6	45.0	
9.5		57.4	51.8		8.7		9.2	18.2	K	9.0		56.9	41.9	K	8.8		57.2	9.2	K	7.8	45	55.1	16.1	K
9.5	0	28.0	44.4		9.3		38.7	48.8		9.1	53	23.0	19.5		8.5	21	27.3	53.4	K	8.8	46	2.6	57.5	
10pr.		+ 31.68	— 3.19		10pr.		+ 31.38	— 3.27		10pr.		+ 31.03	— 3.33		10pr.		+ 30.61	— 3.34		10pr.		+ 30.22	— 3.30	

2529α				
9.4	16	31.7	23.4	B

2601 – 2660					2661—2720					2721—2780					2781—2840					2841—2900				
	12ᵐ—13ᵐ		+13°			13ᵐ		+13°			13ᵐ—14ᵐ		+13°			14ᵐ		+13°			14ᵐ—15ᵐ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	46	15.1	33.6		8.8	16	32.5	42.4	K	9.3	46	23.7	40.4		9.5	11	49.1	19.2		9.5	40	3.3	52.8	
6.0		33.3	12.4	K	9.5		48.4	3.0		9.5		31.6	28.4		5.7	12	15.8	40.9	K*b*	9.3		24.5	34.5	*b*
8.5		51.9	8.0	K	6.5	17	20.9	12.0	K	8.5		40.2	23.7	K*b*	9.5	14	12.8	18.2		9.5		41.0	39.7	
9.5	47	8.4	59.9		9.5		21.0	7.0		9.3	47	8.4	36.6		8.7		33.4	24.1	K*b*	9.5	41	1.6	39.0	
9.3		30.7	40.0		9.3	18	9.8	38.3	B	9.2		10.9	35.9	K	9.5		39.9	54.5		9.5		32.3	59.9	
8.8		57.3	50.5		9.5		31.0	14.3		9.5		17.4	42.5		9.5		52.8	49.8		9.5		35.3	35.6	*b*
8.2	48	14.1	28.7	K	9.3		55.5	25.8		9.3	48	15.0	28.9		9.5		54.9	23.8		9.5	42	5.6	27.0	
9.5		22.8	31.7	B	9.5	19	35.0	18.8		8.3		44.2	10.5		8.7		56.7	9.1	K	9.5		8.0	9.2	
9.2	50	24.6	9.2	K	8.2	20	36.9	27.5	K	9.4		49.9	55.5	*b*	9.5		59.3	32.0		9.5	43	2.5	37.7	
9.1	51	17.3	11.6	K	9.5	21	19.0	2.8		9.1	49	23.8	52.4	*b*	9.5	15	40.5	9.3	B	9.4		2.8	45.0	
9.5		19.3	7.4		9.3	22	54.5	17.7		9.0		59.4	9.1		9.5		41.8	54.3		9.5		36.1	7.0	
9.3	52	35.0	43.6	B*b*	9.4	23	47.8	2.4	B*b*	9.5	50	12.4	51.5		9.5	16	38.8	10.3	K	7.5		39.8	23.1	K
9.3	53	13.1	6.5		9.3		56.4	0.9		9.0		44.4	21.0		9.5		47.3	33.7		9.5	44	2.5	14.1	
9.3		16.1	30.7		9.3	24	50.5	9.0	*R*	9.1	51	31.1	50.0	K	9.3	17	47.5	12.6	K*b*	9.5		14.0	28.6	
9.5		20.1	48.4		9.3	25	36.0	36.4		9.3		39.1	48.4	B	9.5		48.4	9.8		9.5		18.1	16.5	
9.3		28.1	35.6		9.5	26	12.5	57.7		9.5	52	2.5	10.8		9.5	18	46.9	51.8		9.5		21.8	58.3	
9.5		31.6	28.0		9.2		18.0	22.0		9.5		10.3	21.8		9.5		50.8	19.2		8.5		42.5	28.7	K
9.3		37.6	8.5		9.2		21.4	34.4	*b*	8.5		44.7	12.8	K	8.1	20	14.8	2.7	K	9.5		53.0	37.0	
8.0	54	10.3	56.7	K	9.5		48.5	11.8	*R*	7.8	54	2.6	49.2	K	9.5	21	0.3	16.0		9.4		55.1	56.9	
9.0		28.5	57.3	K	8.5		51.8	0.6		9.5	55	3.4	4.2		8.8	22	22.7	56.7	K	9.5	45	26.0	4.6	
9.3		37.1	29.4		9.5	27	14.7	58.7		9.5		23.0	14.3		9.3		59.8	33.1	K	9.5	46	14.6	31.4	
9.4	55	1.0	35.4	B	9.0		37.0	31.0		7.0	56	53.2	25.9	K	9.2	23	1.1	14.3	K	9.5	47	19.5	7.0	
9.5		19.9	43.2	B	6.7		54.0	15.6	K	9.5		55.0	52.5		9.2		7.9	32.4	K	9.5		39.5	57.0	
~~9.5~~		~~34.4~~	~~40.3~~		9.1	28	12.1	20.0		9.5	57	37.1	25.9		9.5		23.9	40.7		9.5		42.6	59.7	*b*
9.5		38.3	24.7		9.4		23.7	45.0	B	9.5		52.7	8.6		9.5		55.4	17.8		9.4	48	34.5	13.7	
9.3	56	1.6	6.1		9.3	29	19.5	57.8		9.5	58	53.6	54.9		9.5	24	17.3	49.7		6.5		35.5	1.0	K
9.3	57	47.0	50.8		8.8		39.6	1.0		9.5	59	17.0	6.4		9.5		20.0	3.2		7.9	49	51.0	45.3	K
9.3		49.6	40.8		9.3		48.9	50.5		9.5	0	0.4	15.9	*a*	7.5		44.8	29.9	K	9.4		56.6	52.1	
9.5		51.6	27.2		9.3	30	0.5	35.9		9.3		12.0	5.9	K	9.5	26	10.4	7.1	*b*	9.0	50	44.0	46.4	K
9.3	58	15.6	36.3	*b*	9.2		4.2	51.3	L*b*	9.0		21.8	16.6	K	9.5		46.3	17.2		9.5	51	9.3	44.5	
9.4		48.1	34.3	B	9.3		7.0	17.8		9.5		28.5	23.1		8.7		50.3	57.6	L	9.5		9.3	7.1	
9.5	59	47.1	35.6		9.0		21.9	40.8	K	8.7		39.1	12.9	K*b*	9.5	27	9.5	56.2		9.5		35.3	23.5	
8.6	0	15.8	6.5	K	9.5	31	11.0	19.2		9.3	1	11.8	34.5		9.5		49.9	2.9		9.5		38.0	32.1	
8.7		20.8	3.9	K	9.5		22.4	2.0		9.0		56.1	13.6	K	7.0	28	4.4	45.2	K	9.2	52	7.8	37.0	
9.3		52.8	6.3		9.5	32	10.9	30.6		9.0	3	4.8	11.6	B	9.3		13.3	30.3		8.9		39.9	49.4	
9.5	1	27.1	38.0		9.5		34.5	46.3		9.5		15.1	1.1		9.0		24.3	52.7	K	9.2		49.6	10.1	*R*
9.5		51.1	24.5		8.0		41.4	31.0	K	9.5	4	5.3	49.5		9.1	29	6.2	11.7		9.0		59.0	34.8	
8.7	2	51.8	5.7		8.7		51.9	19.9	L	9.3		8.8	13.8		9.5		9.3	45.2		9.3	53	14.6	35.9	K
9.5	3	7.1	13.6		9.5	33	21.4	57.5		9.5		46.7	13.3		9.5		22.8	51.8		8.3		27.1	53.7	K
9.3		30.1	47.1		9.3	34	40.5	32.8		9.5	5	25.9	7.4		7.2		46.8	30.4	K	8.7		30.0	3.0	
8.5		40.8	37.0	K	9.2		50.4	2.0		9.5		30.7	56.6		9.5	30	20.8	44.6		9.5	54	38.4	14.7	B
8.5	4	24.9	6.4	K	9.2	36	0.5	25.1	*b*	8.2	6	23.8	16.1	K	9.2		30.8	33.9	K	9.4		43.8	12.3	B
8.3		37.1	29.7	K	9.3	37	16.9	56.8		9.5	7	0.7	29.0		9.5		32.6	21.4		9.4		52.6	44.6	
9.5	6	0.6	38.0		9.3		23.2	26.8		6.2		7.2	39.6	K*b*	9.5		39.5	51.5		8.8		57.8	49.7	K*b*
9.3	7	32.2	6.2		9.2		37.5	4.3		8.9	8	6.7	33.3	K	9.5	31	8.1	46.7		9.3	56	31.0	53.2	
9.5	8	24.6	5.0		8.8		39.4	38.0	K	8.9		9.7	44.7	K	8.5		9.0	25.6	K	9.5		34.6	40.8	
8.3		28.6	32.8	K	8.5	39	32.5	23.0	L	9.1		16.8	11.9	K	9.5	33	19.6	26.6		9.5		42.5	23.1	
8.1	9	36.1	11.6	K*b*	9.3	40	3.5	40.8		9.0		37.1	6.1	K	9.0		37.8	51.8	L	8.8		51.6	3.7	
9.3	10	8.5	14.4	B	9.0		13.5	29.2	L	9.5		41.0	54.8		9.5	34	56.5	13.4		8.3	57	4.6	40.7	K
9.0		27.0	34.7	B	9.5	41	0.0	14.6		8.8		45.8	25.9		9.4	36	6.6	46.0	*b*	9.5		10.8	59.3	B
9.5		44.2	58.1		8.3		37.6	54.0	K	8.4		58.1	7.3	K	9.5		41.5	54.3		9.5	58	44.1	37.7	
8.7		47.2	0.2	K	9.0	42	9.4	36.6	K	9.5	9	28.7	53.4		9.5		57.6	45.0		9.5	59	20.6	43.2	
8.3		51.6	45.0	K	9.2		16.9	56.0		9.5		37.3	40.1		9.5	37	6.0	20.0		9.5		52.0	26.2	
9.5		57.4	34.5	B	7.0		33.2	44.2	K*b*	9.1		49.3	30.6	K	9.5		6.8	16.5		8.2	0	10.6	53.2	K
8.5	11	26.6	40.5	K	7.1		48.5	55.0	K	9.5	10	56.9	2.9		9.5		7.6	10.1	K	9.5		11.5	35.9	
8.3		46.5	8.5	K*b*	9.5	44	41.7	37.6		9.3	11	6.0	51.2	K	9.3	38	2 3	34.5		9.5		32.1	52.6	
8.8	13	21.8	1.0	L	9.5	45	24.0	38.7		9.5		13.2	25.1		9.3		40.9	5.8	K*b*	9.5		39.7	33.9	
8.8		27.8	17.9	L	9.0		55.1	45.3		9.5		18.3	40.4		7.2		56.0	44.2	K	8.7	1	39.0	39.4	K
9.3	14	43.0	11.5		9.5	46	4.8	1.5		9.2		30.0	7.2	K	9.5	39	5.8	21.5		7.0		52.0	3.0	K
8.9		57.1	54.6	L*b*	7.5		11.9	27.5	K	9.2		35.6	6.0	K	9.5		22.0	49.8		9.5	2	0.1	14.4	
		+	−				+	−				+	−				+	−				+	−	
10 pr.		29.91	3.23		10 pr.		29.49	3.09		10 pr.		29.11	2.89		10 pr.		28.81	2.68		10 pr.		28.54	2.45	

2901—2960					2961—3020					3021—3080					3081—3140					3141—3200				
	15ˢ		+13°			15ˢ		+13°			15ˢ—16ˢ		+13°			16ˢ		+13°			16ˢ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
6.2	2	2.4	47.7	K	9.5	26	46.7	48.0		9.5	45	38.2	54.1		8.9	3	58.9	8.1	K	9.3	18	44.6	57.9	B
9.2		17.0	59.0		9.5	27	5.2	9.8		9.5		57.0	2.1		9.5	4	11.1	51.2		9.5		45.1	56.4	
9.5		27.8	54.6	B	9.5		15.2	55.8		9.5	46	25.7	23.7		9.5		12.7	58.0		8.7		56.4	41.0	
9.2		28.4	35.3	K	9.5		28.9	7.9		6.3		27.4	39.3	Kb	9.5	5	16.0	24.3		9.5	19	20.0	41.8	
9.0	4	14.2	39.4	K	9.1		45.7	46.4	K	9.5		51.0	1.5		9.0		45.4	23.9	B	9.5		46.3	1.5	
8.6		22.7	34.3	K	8.5		46.7	29.5	K	9.5		57.7	14.4		9.5		55.8	28.0		9.1	20	5.1	27.3	
9.5	5	42.7	42.5		9.1	28	11.7	12.8	K	8.8	47	24.2	47.9	K	9.3		56.6	57 6	B	9.5		11.4	19.3	
8.5	6	31.0	49.1	K	9.5		41.4	30.6		9.5	48	1.9	56.9		9.5	6	1.7	32.5		9.5		32.4	15.3	
9 5		44.0	52.8		7.5	29	2.9	25.0	K	9.5		19.4	40.5		7.2		11.4	10.9	L	9.5		59.4	3.3	
8.5		45.4	40.1	K	9.3		18.4	16.0		9.5		34.7	13.0		8.1		23.3	36.5	L	9.1		59.5	8.3	b
9.4	7	39.2	40.1	K	9.5		23.5	12.6		9.5		58.0	39.8		6.7		33.8	54.5	K	9.5	21	5.3	20.4	
9.3		51.5	39.7	α	9.3	30	57.0	27.3		9.4	49	0.8	9.2		9.3		37.6	36.3	B	9.1		9.6	46.5	K
9.1	8	32.7	45.6		9.2	31	26.8	44.0	b	9.5		36.1	56.4		9.4		47.7	25.0	B	9.5		20.4	27.3	
9.1	9	3.7	36.4	b	9.4		32.7	5.8		9.5		45.8	9.1		9.0	7	15.3	39.2	Kb	9.4		59.7	20.1	
9.4	10	5.9	25.8	B	9.5		40.8	9.0		9.3	50	22.0	27.5		9.5		18.1	44.9		7.2	22	3.9	56.4	K
9.3		32.2	48.0		9.4		49.9	58.5	B	9.5		56.3	57.2		9.4	8	5.0	2.2		9.3		22.9	49.1	
9.5		40.7	17.9		9.5		55.4	51.7		8.0	51	37.0	14.7	L	9.5		15.4	19.0		9.5		23.5	36.0	
9.5		52.1	58.1		9.5	32	15.4	7.4		9.3		50.1	22.0		9.4		43.0	4.8		9.5		24.0	38.7	
9.0		58.0	41.2	Kb	9.4		58.2	12.4		9.3	52	10.6	52.6		8.7		48.0	30.4	K	8.7		31.4	20.7	L
9.5	12	25.7	10.5		9.5	33	9.4	22.6		9.5		12.2	35.6	B	9.5	9	15.4	1.9		9.1		49.4	34.2	K
9.5		55.7	8.5		9.5		10.7	33.6		8.8		16.7	33.9	L	9.5		26.5	33.1		9.2	25	13.3	11.1	
9.0		58.4	34.6		5.5	34	58.6	18.5	Kb	9.5		17.7	31.1	B	8.9		32.8	56.4		8.0		47.3	27.6	L
9.5	13	8.5	15.4		9.5	35	12.0	48.2		9.3		19.7	43.3		8.9		44.3	49.3		9.5		49.6	33.3	
9.5		49.2	58.2		9.5		13.7	29.2		8.6		45.4	52.2	K	8.1	10	5.2	42.9	K	9.3		52.6	51.4	
9.1	14	18.2	40.6	B	9.5		24.0	25.3		8.8	53	21.4	42.2		9.5		14.5	12.8		9.5		57.8	13.6	
9.4	15	15.2	17.5		9.5		35.0	34.7		8.3	54	4.7	57.8	L	9.5		38.7	50.4		8.8	26	26.7	45.8	K
9.5		23.2	21.2		9.5		54.1	39.2		7.0		10.7	41.5	L	9.4		50.1	16.9	B	7.2	27	7.2	42.8	K
6.4		32.2	6.5	Kb	9.5	36	9.7	24.3		9.5		19.0	27.5		8.8		57.2	36.0	K	9.4		22.5	2.1	
9.1		35.2	54.8	αB	9.5		11.0	31.9		7.5	55	8.2	53.1	K	9.2	11	10.1	19.2		8.0		22.5	49.2	K
7.8	16	5.9	53.7	K	9.3		54.8	6.4		9.2		38.9	48.4	K	8.1		20.0	23.5	K	9.4		55.9	53.6	
9.3		21.2	30.2		9.3		57.4	33.6		9.2		54.4	20.4	K	8.4		22.4	31.8	K	9.3	28	23.3	57.2	B
9.4		25.7	15.4		9.5		59.0	53.2		9.5	56	5.0	42.5		9.3		24.5	29.8	K	9.5		47.7	23.4	
9.5		53.7	31.2		8.5	37	5.1	16.5	K	9.2		23.5	50.3		9.5		47.5	39.7		9.2		54.8	22.7	b
9.5	17	5.2	20.5		9.5		6.4	53.6		9.5		37.4	42.9		9.0		49.5	9.0	K	8.4	29	28.7	36.4	K
8.3		8.2	53.0	Kb	9.5		17.7	26.4		9.5		46.0	2.4		8.5		57.2	52.0	B	9.3		55.2	38.7	
8.7		34.4	34.9	K	9.5		51.7	24.7		9.2	57	25.2	29.0	B	8.8		57.3	15.6	K	9.3	30	25.5	55.3	
9.3		37.3	16.5	B	9.5		52.2	42.6		9.5		33.4	37.1		8.9	12	7.0	21.4		6.0	31	6.6	59.6	K
9.5	18	1.9	54.4		9.5	38	50.4	29.5		9.2		39.7	48.7	K	9.4		11.0	42.5		9.0	32	6.3	56.6	S
9.5		4.7	27.8		9.5	39	4.0	47.8		9.5		51.4	57.0		8.2		23.2	4.8	K	9.5		17.2	1.5	
9.5		16.7	39.8		8.3		6.2	0.7	K	9.5		54.9	24.0		8.5		40.4	42.7		9.4		19.2	22.4	Rb
9.5		30.8	7.5		9.5		46.7	20.6		9.5	58	8.0	52.9		8.3		43.3	1.0	K	9.5		23.3	31.8	
9.3		49.7	32.5		9.0		47.3	56.0	L	8.5		11.4	31.2	Kb	9.4	13	29.9	50.2		9.5		34.7	29.0	
8.1	19	22.7	26.8	K	9.5	40	18.0	19.5		8.5	59	17.7	43.4	K	9.5	14	56.7	26.9		8.0		36.0	20.4	L
9.3		49.0	11.8		9.5		26.4	32.5		7.5		18.2	42.7	K	8.2		57.8	13.5	K	9.5		40.2	35.6	
9.3	20	16.7	16.4		9.4		40.7	46.7		9.5		23.0	21.0		9.5	15	6.9	27.2		9.4		40.5	46.2	
7.9		21.7	53.6	K	9.5		58.0	47.1		9.5		24.0	41.2		7.3		11.8	48.3	K	9.5		44.2	48.6	
9.0		57.2	36.0	K	9.5	41	18.4	19.9		9.5		32.7	54.7		9.5		52.0	26.9		9.3	33	1.2	15.6	
9.5	21	46.0	4.7		9.5		19.6	11.4		8.8	0	32.9	56.1	L	8.7	16	36.2	51.8		9.5		6.7	13.2	
9.5		49.5	49.4		8.4		31.0	36.4	K	7.5		42.0	43.3	K	8.5		38.4	36.2		9.3		40.7	36.9	R
9.5		55.1	57.0		8.9		35.5	45.9	B	9.3		42.3	45.8	K	9.1		45.9	54.8		9.1		43.8	8.3	Kb
9.5	22	13.6	16.7	B	9.5		53.0	57.4		8.5	1	10.1	8.3	B	9.5		51.7	38.0		9.4	34	18.3	32.8	B
9.3		19.1	22.6		7.0	42	2.7	10.4	L	9.5		16.4	33.0		8.8		56.7	42.4	K	9.5		20.2	43.3	
6.8		19.2	33.3	K	9.5		26.6	11.7		8.5		19.0	12.3	L	9.5	17	3.7	41.8		9.5		35.2	21.4	
9.0	23	48.2	33,3		9.0	43	19.4	10.2	Lb	9.5		36.4	57.7		8.3		14.4	10.5	K	9.0		57.5	19.5	
9.5	24	53.7	50.1		8.8		40.0	26.7		7.8	2	26.4	18.8	K	9.5		36.7	54.2		9.5		58.8	7.0	
9.5	25	49.7	40.0		9.5		47.2	8.3		9.5		28.1	13.9		9.0		36.8	35.9	B	7.8	35	8.1	26.9	Lb
9.3		54.2	13.2		8.2		54.1	33.0	K	9.3		31.8	7.3		9.5		54.7	9.3		9.4		38.2	7.4	B
9.5	26	21.3	58.2		9.5	44	4.3	57.8		8.9		34.7	18.8	K	9.5		57.7	28.0		8.3		39.0	19.2	L
9.5		27.2	9.8		9.0		39.6	6.2	K	9.2		36.7	27.4		9.5	18	6.8	0.1		9.5		42.5	59.2	
8.0		29.0	33.4	K	8.7	45	36.4	50.0	K	9.3	3	9.0	39.4		9.4		35.0	26.8		9.5		43.0	8.2	
		+	—				+	—				+	—				+	—				+	—	
10pr.		28.29	2.19		10pr.		28.11	1.95		10pr.		27.97	1.72		10pr.		27.86	1.52		10pr.		27.76	1.30	

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	16ᵐ		+13°			16ᵐ–17ᵐ		+13°			17ᵐ		+13°			17ᵐ		+13°			17ᵐ		+13°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	35	44.0	6.9		8.3	49	45.6	28.9	K	8.5	4	1.0	36.1	B	9.5	21	38.6	20.1		9.5	37	9.3	22.8	
9.5	36	0.7	10.1		9.4		59.3	41.8	B	9.1		42.4	2.7		8.9		45.2	56.2	K	9.4		9 8	13.9	
8.4		2.8	53.9	Kb	9.5	50	0.7	39.4	B	9.3	5	13.4	59.6		9.5	22	29.6	33.1		9.3		21.7	14.2	
9.5		26.2	13.6		8.2		19.4	12.5	K	9.4		30.7	44.8	B	9.5	23	0.7	11.5		7.2		40.5	52.3	K
7.0		31.3	9.8	K	9.2		22.8	0.2		9.5		34.4	50.7		9.5		6.6	40.3		7.9	38	19.9	4.9	B
8.5	37	2.2	10.4	K	9.5		38.6	44.8		8.8		42.7	25.1	K	9.2		11.2	50.4		9.5		49.2	16.7	
8.0		52.0	52.9	K	9.3		43.4	37.4		9.4		43.7	49.5		9.1		11.5	55.0	K	7.8		51.1	4.9	B
8.7	38	22.6	52.9	K	9.0		46.9	15.8		9.4	6	2.0	32.6		8.0	24	31.6	13.5	K	9.0		58.0	32.1	K
9.5		31.2	47.9		9.4	51	13.6	22.4		9.3		49.5	52.0		9.4		40.4	5.6		9.5	39	36.7	33.4	
9.5		53.0	21.5		9.3		30.9	52.8	B	9.5	7	4.4	5.6		9.5	25	36.8	19.1		9.3		42.6	55.5	
9.5	39	12.9	11.5		9.5		44.0	38.2		9.2		8.9	13.8	*b*	9.5		46.6	14.6		9.4	39	49.3	46.8	
9.4		13.4	25.0	B	9.5		45.9	52.4	B	9.3		33.0	43.0		8.6		50.1	50.7		8.7		50.3	39.9	K
9.2		19.4	37.2		9.4	52	16.9	53.1	B	9.1		57.1	53.3	*b*	8.8	26	8.2	59.2	Kb	9.4	40	58.3	6.2	
9.2		27.4	7.2	L	9.5		27.0	55.6		9.5	8	22.6	3.1	B	9.5	27	2.1	53.7		9.2	41	18.4	26.0	*a*
9.4		30.5	4.2		9.1		51.8	10.0	K	9.4		23.9	38.2		9.5		32.7	54.8		9.3		38.7	13.8	
9.5	40	11.4	40.0		9.4		53.3	15.3		9.5		51.2	42.0		9.2		36.4	7.5		9.0		42.8	24.5	
9.5		23.2	13.5		9.5	53	3.2	31.7		9.5	9	11.4	46.5		6.5		42.6	15.7	K	9.0		58.2	29.3	R
7.3		27.2	17.3	K	9.1		10.4	36.4	*b*	9.1		59.1	26.6	L	9.5		53.6	42.5		9.3	42	20.7	32.8	R
9.5		42.7	9.3		9.1		10.5	50.3	K	9.2	10	15.1	23.8		9.4	28	1.6	10.2		8.8		58.2	57.8	K
8.3		45.0	55.9	K	9.5		29.0	37.8		9.4		23.6	46.5		7.7		24.2	13.6	K	9.5	43	0.3	26.3	
9.3	41	10.2	56.9	B	9.5		33.8	47.1		7.2		30.0	17.3	L	9.0		31.1	42.4		9.2		17.6	32.5	B
9.3		16.0	52 5		9.5	55	4.1	0.7		8.1		43.6	28.6	L	9.0		35.6	21.1		9.5		39.2	14.5	
9.2		21.0	26.9	K	9.5		9.2	3.4		9.0	11	10.6	12.9		9.5		36.3	42.7		9.2		46.7	29.3	
9.5		23.5	31.0		8.8		31.8	22.0		9.5		14.4	38.0		7.8		47.5	28.0	K	9.5		57.5	22.1	
5.9		28.1	50.9	K	8.7		41.9	50.0	K	9.5		31.6	31.5		9.5		50 5	59.3		9.2	44	0.0	11.8	*b*
9.0		56.2	46.9	K	9.3		43.0	17.3		9.5	12	8.2	7.0		9.4	29	12.3	57.5		9.5		4.4	53.6	B
9.5	42	6.9	34.7		9 5		44.8	56.7		9.5		10.1	0.8		9.3		35.9	32.5		9.3		27.1	34.4	*a*
7.3		16.8	8.3	*B*	8.3	56	0.9	9.3	R	9.2		28.6	12.1		9.5		36.6	45.8		9.5	45	0.6	54.2	B
9.5		21.6	55.5		9.5		33.5	25.3		8.5		50.1	19.0	K	9.2		39.7	29.4	B	9.4		0.9	56.2	B
6.8		26.5	11.4	*B*	9.3		47.9	57.7	B	9.5	13	33.0	29.7		9.3		51.4	24.7	B	9.5		14.0	57.9	
9.3		36.2	46.9		9.0		53.5	39.5		9.5		42.6	11.2		7.3		53.6	21.7	K	9.4		14.4	56.2	B
9.5		51.9	35.5		6.4	57	0.1	49.2	K	9.4		44.6	2.6		6.7		58.6	55.0	K	8.5		15.5	35.5	R
5.6		53.0	31.3	K	8.5		3.5	53.2	K	9.4		58.1	13.5		9.4	30	12.1	40.3		9.4		42.5	14.9	
9.5	43	6.7	40.6		9.5		6.0	46.8		9.4		59.1	7.0		9.3		39.4	12.2		9.0		55.4	32.4	Rb
9.1		9.7	55.2	K	6.6		17.5	46.8	Kb	8.5	14	28.7	9.8		9.4		48.1	43.5		9.5	46	5.5	21.4	
9.5		28.2	39.1		8.8		39.6	30.9		9.5		38.1	23.5		9.4		53.1	19.0		9.4		17.6	59.4	
9.5		50.3	7.3		9.5	58	30.5	24.8		8.0		41.1	46.5	Kb	9.5	31	8.0	46.8		8.6		45.2	47.8	K
9.5		50.7	2.9		9.5		31.5	5.1		9.5	15	8.6	27.3		9.5		11.2	12.7		9.3	47	2.8	56.8	K
9.4	44	14.8	23.7	B	9.4		35.0	26.1		9.5		13.4	0.9		8.7		13.5	6.7	K	9.5		13.1	33.1	
9.5		30.9	33.5	B	9.5		37.0	42.6		9.5		20.6	35.2		9.5		51.1	45.8		9.5		59.4	23.5	B
9.3		35.5	2.4		9.3		40.5	34.7	K	8.9	16	49.1	17.6	K	6.5	32	18.6	25.1	K	9.4	48	4.3	0.2	B
9.4	45	34.2	0.3	B	9.5	59	20.9	53.3		7.2		59.0	32.7	K	9.5		28.2	53.4		9.5		6.5	17.7	B
9.5		47.3	8.8	B	9.5		23.7	8.7		8.0	17	13.1	13.5	K	7.5	33	1.0	23.1	K	9.5		15.6	37.8	
9.2		48.0	28.0	*b*	9.5		32.7	23.0		9.5		19.1	36.2		9.0		1.6	35.8	L	9.3		45.6	20.2	
9.4	46	30.7	1.1		9.3		36.3	16.0	B	8.1	18	15.0	28.2	K	9.2		10.2	50.3	b	8.7		46.9	52.9	L
9.5		46.8	39.8		9.2		50.6	38.2	*B*	9.3		18.9	57.5		9.1		43.5	50.6		9.5		56.2	7.4	
9.1		51.9	40.8	R	9.0		55.4	0.0	K	9.1	19	11.7	9.0	K	9.5	34	9.7	29.3		8.2	49	24.1	42.3	K
9.2		59.6	18.8		9.5	0	8.1	50.5		9.1		14.1	15.3		9.3		21.7	56.2		9.4		36.0	39.2	
9.5	47	3.4	27.5		8.1		48.3	4.3	K	8.9		30.1	42.8	K	9.5	35	20.6	34.5	B	9.5		44.1	13.8	
9.1		20.1	48.9	K	9.2		59.4	43.3	*b*	9.5		33.2	19.1		9.4		21.3	15.5		9.1		56.5	7.5	K
9.5		39.5	35.3		9.4	1	52.0	56.4		9.4	20	2.2	43.5	B	9.3		26.5	37.7		9.5	50	23.8	26.6	B
9.5		41.2	40.4		9.2		58.1	53.4		9.1		19.1	49.9	B	9.3		30.3	1.8		7.8		27.8	58.6	Kb
9.0		44.1	26.7	K	9.3		59.2	19.0		9.5		25.1	46.0	B	9.3		30.5	23.8		9.3		39.4	57.5	*a*
9.4	48	4.9	40.7		9.1		59.6	59.8	*Bb*	9.4		29 9	59.4		7.8		48.2	47.2	K	9.5	51	34.1	4.3	
9.3		24.5	0.7	B	9.4	2	31.4	21.7		9.5		49.1	35.8		8.9	36	13.7	29.7	Kb	8.7	52	0.2	54.0	B
9.4		31.9	8.3	B	9.5		42.8	58.9		9.1	21	5.6	43.5		9.3		38.2	53.1		9.5		9.3	31.6	
9.3		32.6	24.0	B	9.3		46.9	36.2		9.5		6.2	55.2		9.0		41.8	25.2	K	8.2		20.2	53.2	K
6.3		35.5	52.0	K	8.9		48.6	2.0	K	9.4		14.4	2.9		9.1		56.2	1.2	K	7.8		33.6	55.0	K
9.5		51.6	24.5	B	9.1		49.3	3.0	K	9.5		31.2	57.3		9.3		59.6	58.6		9.2		46.0	51.5	
9.5	49	38.8	3.6		8.9	3	30.0	9.8	Kb	8.8		34.1	54.6	K	9.5	37	1.0	6.0		9.3	53	14.5	36.1	
		+	—				+	—				+	—				+	—				+	—	
10pr.		*27.69*	*1.11*		*10pr.*		*27.63*	*0.91*		*10pr.*		*27.58*	*0.67*		*10pr.*		*27.54*	*0.44*		*10pr.*		*27.51*	*0.22*	

3501—3560				3561—3620				3621—3680				3681—3740				3741—3800			
17ʰ—18ʰ		+13°		18ʰ		+13°		18ʰ		+13°		18ʰ		+13°		18ʰ		+13°	
m	′	″		m	′	″		m	′	″		m	′	″		m	′	″	
9.5	53	34.2	8.2	9.1	6	14.0	25.0	9.5	15	42.6	59.2	9.1	26	21.0	14.5 K	9.3	39	59.3	40.7
9.5		56.3	9.3	9.5		38.2	19.1	9.5	16	18.0	30.9	9.5		25.9	11.4	9.5		59.7	34.6
9.2	54	38.6	7.8 b	8.8		55.1	8.5	8.9		35.2	4.9	9.5		36.3	3.4	9.5	40	11.4	4.5
9.5	55	6.5	34.8	7.7		56.4	35.9 K	9.3		37.3	13.5	9.0		49.4	6.7	9.2		16.7	0.1
9.4		24.3	32.2	9.5	7	6.7	4.7	9.4		46.8	28.4	8.8	27	7.6	53.1 K	9.5		18.7	38.2
9.4		25.4	57.5	9.2		7.9	29.1	9.2		48.8	9.5	9.1		52.5	25.4 b	9.5		26.5	24.5
9.4		32.6	3.4	9.3		14.3	16.0	9.2		56.5	27.6	9.3		54.2	29.6	9.3		27.2	44.8
9.5	56	33.0	13.7	8.8		16.7	25.8 K	9.2	17	3.6	29.4	9.2		58.3	46.5	9.5		28.4	19.1
9.2	57	11.5	46.7 b	9.4		19.6	13.3	9.5		27.0	55.2	9.2		59.5	51.0	9.5		31.8	45.6
9.5		44.1	22.3	9.5		32.3	14.8	9.3		32.2	46.6	9.5	28	11.9	13.8	9.1		40.6	35.7
9.5	58	24.6	10.3	9.5		43.9	14.8	9.0		41.6	31.3	9.4		35.7	43.1	9.2		41.0	18.1 K
9.4		46.0	7.8	9.4	8	9.0	24.7	7.9		52.8	38.0 B	9.3		37.1	29.1	9.5		55.4	47.4
9.2		53.1	38.8	9.1		19.7	44.3 b	8.8		55.1	5.4 K	9.0	29	37.1	28.4	6.7	41	0.7	17.0 K
8.5	59	5.8	28.2 L	9.3		31.0	0.5 R	9.5		57.3	26.4	9.5		58.7	35.2	9.5		3.5	2.2
9.5		17.0	30.3	9.5		59.1	32.0	9.5	18	2.5	15.5	9.5	30	37.0	33.4	9.5		8.9	48.7
9.5		17.0	53.0	9.5	9	7.9	10.8	9.2		24.0	21.5	9.0		49.5	18.0	9.5		23.1	8.8
8.9		32.6	50.7 K	9.5		7.9	13.6	9.1		24.6	58.0	9.5	31	0.2	25.1	9.1		44.4	1.9
8.9		25.1	58.3	9.5		23.8	53.3	9.5		48.9	44.9	9.5		1.5	40.7	9.5		47.3	56.0
9.1		28.6	20.6	8.5		31.3	1.0 K	9.4		50.4	36.5	9.5		53.1	43.6	9.5		49.4	51.1
9.1		29.2	52.5	9.5		39.1	58.0	9.2		53.0	27.4	9.0		57.3	22.2	9.5	42	5.6	39.3
9.5		51.6	15.1	8.5		40.0	8.1 Rb	9.5		57.5	35.1	9.2	32	11.7	57.6	9.3		11.7	29.2
9.5	0	2.5	6.2	9.5		44.3	18.7	9.0	19	11.0	57.7	8.8		27.2	19.2	9.5		15.0	52.8
9.2		4.1	59.2 K	9.4		47.5	26.7	9.5		36.7	31.0	8.5	33	26.5	39.5 K	9.3		16.0	46.5
9.2		6.9	57.1 a	9.5	10	13.6	59.7	9.5		47.3	50.9	7.6		42.2	14.4 K	8.3		26.9	3.4 Sb
9.2		16.2	51.1 K	9.5		17.7	30.7	9.4	20	8.0	47.0	9.5	34	21.8	30.5	9.0		28.1	3.2
9.5		30.1	7.9	8.7		19.0	57.9 K	9.5		27.2	14.7	9.5	35	37.3	53.4	8.3		29.8	20.0 B
9.3		39.4	47.5	9.2		43.2	48.6 a	9.5	21	10.5	4.0	9.5		40.4	57.2	9.4		53.2	15.6
9.5		44.7	2.3	9.5	11	1.7	9.4	9.2		15.2	14.8 b	9.4		45.2	37.9	9.4		58.7	37.5
6.7	1	7.8	4.5 L	9.5		15.2	10.5	9.5		16.4	26.9	8.5		46.4	55.1 K	8.5		58.7	3.8 R
9.4		16.8	6.1	9.5		18.1	24.6	9.5		28.7	19.1	9.4	36	1.8	6.7	9.4	43	6.0	51.5
9.5		33.2	43.8	9.4		24.6	7.1	9.2		52.6	31.4 a	9.4		8.7	4.1	8.8		8.5	52.4
9.3		44.1	4.9	9.5		24.6	0.0	8.9		58.9	45.7 K	9.5		9.0	53.3	9.1		21.1	32.1
9.4		49.5	33.5	6.1		25.7	43.6 B	9.4	22	2.9	12.5	7.5		14.2	25.6 L	9 5		29.1	4.8
9.5		50.0	38.3	9.3		34.8	34.0	9.5		23.5	16.0	9.2		14.8	41.1	8.5		32.1	45.2
9.4		50.9	28.2	9.5		50.9	51.7 a	9.4		25.0	38.5	9.2		54.3	6.2	9.4		37.8	18.6
9.5	2	1.9	48.9	9.3		53.8	33.1	9.5		31.4	11.1	9.1		57.0	0.7	8.6		40.6	57.7
9.4		30.2	48.1	8.8		54.9	28.6 K	8.3		35.8	31.7 K	9.5		58.9	9.1	9.5		48.4	27.9
9.4		33.0	25.8	8.2	12	1.8	22.2 K	6.8		48.1	46.0 K	9.5	37	1.5	47.1	9.5		49.5	48.1
9.5		33.1	30.2	9.4		3.1	29.8	9.5	23	10.7	18.5	9.5		5.1	9.6	9.3		54.8	41.5
8.4		36.5	27.7 S	8.8		8.5	50.8	9.5		34.9	45.7	9.5		7.0	18.5	9.4	44	21.7	33.5
8.9	3	12.6	3.9 K	8.8		20.8	29.8 K	9.5		35.6	2.5	9.5		11.2	17.8	9.1		32.2	15.8 a
9.4		51.9	14.0	9.4		21.5	12.1	9.0		46.8	41.7	8.2		12.2	2.9 K	9.0		37.0	15.0
9.5		59.4	53.5	9.5		34.1	4.6	9.4	24	10.2	46.9	9.5		31.1	54.7	7.9	45	3.5	21.0 S
9.5	4	0.5	4.5	9.4		35.7	50.1	9.4		14.4	36.4 a	9.5		41.4	8.3	9.5		16.0	54.0
9.5		18.8	58.2	9.4		51.6	40.8	9.5		19.9	43.1	8.8		48.7	15.7	9.5		18.7	16.9
9.5		31.0	56.4	8.4		59.8	9.5	9.5		27.2	17.6	9.5		57.0	29.0	9.4		22.2	38.9
9.5		47.6	5.4	8.5	13	5.2	59.6 R	8.0		32.3	5.2 Kb	9.5	38	0.2	1.7	5.9		23.7	48.0 K
9.5	5	0.7	33.4	9.5		51.9	45.6	9.0		33.1	4.6 K	9.5		2.9	14.2	9.3		27.1	12.0
9.5		6.4	27.8	9.5		59.0	3.6	9.5		35.8	10.6	9.5		15.3	5.0	9.5		32.4	3.2
8.8		21.6	9.4 K	9.5	14	10.5	37.4	9.4		41.2	34.2	8.8		22.6	35.6	9.5		41.2	10.1
9.5		23.7	53.4	9.5		11.8	7.6	9.1		50.3	51.1 K	9.5		32.3	14.3	9.5		41.6	31.5
9.5		25.8	17.6	7.8		24.7	45.0 K	9.1		55.2	21.9	9.5		40.5	6.5	9.4		45.8	35.1
9.5		30.1	19.4	9.4		29.6	59.8	8.7	25	0.5	31.0	8.8		44.4	43.9	9.4		46.7	40.4
8.2		32.7	45.7 K	9.5		36.9	1.1	9.3		4.3	0.2	9.5		47.2	57.9	9.3		48.3	6.8
9.5		33.0	34.8 a	8.3		48.0	14.9 L	9.5		7.4	57.0	9.4		54.9	36.6	8.0		56.8	49.7 K
9.5		34.7	56.1	9.4		56.9	7.0	9.5		11.3	58.0	8.8		56.8	5.0	9.5	46	4.0	21.7
9.5		47.5	57.0	9.1	15	9.7	58.7	6.8		30.3	37.8 K	9.5	39	13.1	58.0	9.0		5.3	51.4 K
9.2	6	0.8	4.3 K	9.5		18.7	21.5	9.5		38.0	54.9	9.5		23.8	32.5	9.5		25.2	5.4
9.5		4.0	48.7	9.4		20.0	2.0	9.4		53.3	27.6	8.2		23.8	18.9 K	9.5		26.4	11.3
9.5		10.4	48.1	9.3		33.1	35.4	8.6	26	10.8	42.6 K	9.5		39.2	42.4	9.5		33.8	0.0
10 pr.		+ 27.51	+ 0.02	10 pr.		+ 27.51	+ 0.17	10 pr.		+ 27.52	+ 0.32	10 pr.		+ 27.55	+ 0.53	10 pr.		+ 27.57	+ 0.63

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	18ᵐ		+13°			18ᵐ–19ᵐ		+13°			19ᵐ		+13°			19ᵐ		+13°			19ᵐ		+13°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9.5	46	41.6	20.3		9.4	54	32.5	14.7		9.2	2	48.5	59.6		7.4	12	38.3	54.4	K	9.5	25	44.5	26.5	
9.5		43.0	27.9		9.4		39.1	25.5		9.2		49.8	58.4		8.3	13	11.9	47.7	K	8.9	26	6.2	26.7	K
9.3	47	3.3	1.6		9.5		46.0	52.1		9.5		55.0	33.3		9.2		17.8	56.3		9.5		9.5	58.4	
9.5		19.9	45.4		8.9		57.7	43.4		9.5	3	8.4	4.8		9.2		18.2	27.7		9.4		12.7	7.8	*a*
9.5		23.0	35.4		9.5	55	5.1	3.3		9.2		24.5	36.0		7.5		31.9	52.6	K	9.5		13.9	27.9	
9.5		27.2	8.7		9.5		5.5	27.1		9.2		40.3	51.4	*b*	9.5		52.5	8.5		9.4		16.3	50.3	
6.7		41.1	12.9	K	9.5		9.8	39.0		9.5		57.8	35.2		9.5	14	6.6	11.9		9.3		18.2	34.1	
9.5		42.7	36.2		9.5		21.4	0.8		9.5	4	13.8	36.6		7.0		8.7	18.5	*B*	9.5		34.1	24.4	
9.2	48	1.5	19.6		9.4		24.6	17.5		8.7		15.5	19.8	K	8.6		9.7	51.7	K	9.3		36.7	52.0	
9.1		18.0	4.0	K	8.8		28.7	13.0	K	9.5		38.7	51.2		9.0		43.1	36.4	K	9.0		43.9	7.2	K
9.2		34.5	23.4		8.5		44.8	24.0	K	9.5		40.6	29.0		9.5		43.5	16.4		8.4	27	6.4	34.1	K
9.0		45.4	19.5		9.5		47.4	57.4		9.5		51.8	40.4		9.5		53.4	44.2		9.5		6.5	5.8	
6.5		46.8	2.4	K	9.5		50.6	20.6		9.3		55.0	4.8		9.3	15	4.2	5.9		9.5		15.7	11.6	
9.0		50.5	38.8		9.0	56	2.4	34.8	K	9.4		56.7	34.8		9.3		6.2	0.3		9.5		21.1	2.0	
9.3	49	1.1	40.5		9.1		5.9	31.2	K	9.5		56.9	43.7		9.0		24.8	38.6	K	9.5		25.8	43.2	
8.6		20.3	25.3		9.5		6.8	8.6		9.3		57.6	41.3		9.3		30.7	44.3		9.4	28	4.9	23.0	
9.5		31.0	40.8		8.9		18.2	1.0		8.6	5	6.0	40.4	K	9.3		35.5	15.1		9.5		6.8	13.1	
9.5		32.2	20.6		9.1		29.0	26.2		9.5		10.2	19.7		9.5		45.5	49.5		9.5		7.4	52.8	
9.5		45.4	3.4		9.1		29.8	58.2		8.6		11.0	32.6	K*b*	9.5		54.7	25.9		8.7		8.3	51.0	
9.5		47.5	25.3		9.3		32.8	27.7	K	9.5		12.5	52.8		9.1		56.6	37.0	K	9.5		9.8	12.7	
9.5	50	1.7	56.0		9.0		38.9	50.9		8.8		14.4	14.9		8.6	16	8.3	6.1	K	9.5		11.5	36.5	
9.5		1.9	31.1		9.5		39.0	55.8		8.6		22.2	41.1	K	9.5		21.7	51.8		9.5		16.4	17.7	
9.1		23.9	31.6	K	9.5		44.4	1.2		9.5		23.0	46.1		9.2		29.2	3.9	K	8.4		37.2	18.2	
9.4		29.9	32.7		9.4		48.1	31.9	*a*	9.5		32.5	48.2		9.5	17	17.8	3.4		9.4		39.8	35.0	
9.5		30.8	48.4		9.3		50.2	13.3		9.5		38.6	15.4		9.5		27.9	22.5		9.5		42.6	52.8	
6.8		31.4	11.2	K	9.5		53.3	13.3		9.1		38.7	6.9		9.5		40.2	57.2		8.8		48.1	45.0	
8.8		39.4	4.6	K	8.7	57	5.1	28.1	K*b*	9.5		43.5	4.3		9.5		58.9	16.2		9.5		51.9	52.5	
9.3		56.6	31.5		9.5		8.5	28.6		9.4		59.3	18.4		9.4	18	22.5	5.4		9.5		56.5	58.6	
9.1	51	1.8	53.8	*b*	9.2		36.0	55.6		8.5	6	0.1	9.3		9.5		24.0	28.5		8.0	29	17.0	31.0	*B*
9.5		14.7	29.2		9.4		42.3	54.5		9.5		43.0	30.9		8.6		45.7	25.0	K	8.7		17.0	57.4	
9.5		18.0	27.7		9.5		51.9	47.1		9.5		45.9	28.7		9.5		51.5	36.5		9.5		26.9	34.4	
8.8		22.2	16.3		9.3		56.4	49.3		9.5		58.7	46.4		9.5		51.9	46.3		9.5		39.2	50.3	
9.5		37.0	41.5		9.0	58	1.7	52.5	R	9.5		59.7	55.9		8.9	19	17.8	5.8	K	7.8		58.3	2.9	L
9.5		39.7	1.9		9.5		10.8	45.5		9.4	7	8.2	22.5		9.5		28.2	54.7		8.9		58.7	7.0	
9.5		51.3	23.8		9.5		22.8	23.0		9.5		22.0	36.5	*R*	9.5		37.0	9.5		9.4	30	14.2	50.2	
9.4		54.7	45.0		9.5		29.6	21.0		9.0		25.9	19.1	K	9.5	20	14.8	4.2		9.5		22.0	47.6	
9.5		59.4	44.4		9.2		35.5	20.2		9.4		25.9	43.3		9.3		32.1	58.5		9.2		25.5	29.0	K*b*
6.4	52	7.3	43.1	K	9.5		41.4	55.7		9.5	8	29.8	3.9		8.8		40.9	41.6		9.3		26.6	44.0	
9.3		13.8	12.5		8.0		44.8	39.0	L	9.4		33.0	35.7		9.1		47.5	6.7		9.4		27.7	34.6	
9.1		20.4	32.0	K	9.5		50.6	35.4		8.5		34.4	0.0		6.0		53.9	59.4	K	9.4		34.4	50.1	
5.3		25.6	26.0	K	9.5	59	2.2	33.4		9.4		47.3	37.8		9.5	21	10.7	18.4		9.0		42.8	11.0	
9.4		28.5	42.7		9.0		10.4	38.4	K	9.5		48.1	53.3		9.0		16.7	11.0		8.8		43.4	9.4	K
9.5		29.9	39.3		8.4		38.9	37.1	K	9.5		53.3	34.7		7.7		22.4	47.1	K	9.5	31	3.1	24.4	
9.5		36.4	59.0		9.3		45.6	33.3		9.4		56.7	52.1		8.8		30.4	41.6	K	9.5		10.9	53.5	
9.3		39.1	47.4		8.3		46.4	27.6	K	9.1	9	9.8	15.2	*b*	9.3	22	2.3	34.9	K*b*	9.4		18.1	21.9	
9.3		39.1	45.4		8.6		48.3	43.8		9.5		9.9	11.5		9.5		4.5	1.1		9.5		20.6	45.4	
9.5		42.6	18.8		9.5	0	5.0	4.9		9.2		28.6	39.4		9.4		45.7	25.1		9.5		34.1	1.0	
9.5		43.5	37.5		9.5		5.5	11.5		9.4		29.3	27.2		9.5	23	27.3	30.7		9.5		42.6	21.2	
9.5		56.1	59.5		8.7		5.6	19.9	K	8.0		45.1	50.6	*B*	9.5		27.8	36.6		9.5		43.3	35.6	
9.0	53	3.6	4.0		9.5		21.1	0.6		9.5		46.0	39.7		8.9		54.7	9.5		9.5		48.2	22.0	
9.0		19.6	30.3	K	9.5		23.4	40.2		9.5	10	30.5	32.2		9.3	24	12.2	18.7		9.5	33	0.3	42.6	
9.0		20.1	30.1	K	8.5		24.2	8.8	K	9.5		39.6	31.1		9.5		14.0	45.6		9.5		0.5	46.0	
8.6		30.5	57.7		9.1		30.8	47.1		9.5		42.7	32.1		9.5		33.9	43.8		9.4		11.0	25.7	
9.5		33.6	41.3		8.8		59.5	37.2		8.9		44.9	56.6		9.5		48.0	53.9		9.5		35.5	13.6	
9.5		36.2	2.2		9.3	1	43.3	26.2		9.4		53.1	54.2		8.7		53.9	48.7		9.5	34	6.8	40.9	
9.5		43.0	20.0		9.3		44.9	31.6		9.5	11	7.9	9.4		8.8		54.0	9.4		9.5		11.9	18.2	
9.5		47.5	48.5		9.1		57.3	45.8	*b*	9.5		39.6	59.4		9.4		58.3	59.2		9.5		14.8	2.4	
9.0		53.3	2.1		9.5	2	10.0	4.7		8.9		49.3	49.6	K	9.2		58.9	26.8		5.8		23.7	29.2	K*b*
9.5	54	27.0	51.4		9.3		19.4	31.1		9.2	12	18.7	28.0		7.9	25	1.0	19.4	L	8.1		23.8	15.5	*B*
9.5		30.1	12.4		9.5		31.2	8.6		9.4		30.6	51.9		9.5		28.3	6.3		8.7		26.9	7.3	*B*
		+	+				+	+				+	+				+	+				+	+	
10pr.		*27.59*	*0.74*		*10pr.*		*27.61*	*0.84*		*10pr.*		*27.65*	*0.96*		*10pr.*		*27.69*	*1.12*		*10pr.*		*27.75*	*1.27*	

4101—4160

	19ᵐ	+13°	
m	′ ″	′	
8.2	34 26.9	39.1	
8.2	29.5	45.2	
8.2	29.8	40.2	
8.2	32.0	43.3	B
9.5	36.9	47.6	
9.4	40.0	55.9	
8.7	55.2	30.4	K
9.5	35 29.8	11.6	
8.7	34.5	45.0	K
9.0	35.0	59.9	
8.9	40.5	42.5	
9.2	44.0	1.9	
9.4	51.4	46.4	
9.0	55.5	54.8	K
8.9	36 2.5	27.5	K
9.5	7.2	59.9	
9.5	8.1	14.1	
8.6	19.4	0.6	
9.2	22.5	6.4	
9.5	31.5	48.8	
9.5	36.0	16.5	
8.7	50.5	21.0	L
9.5	50.7	56.1	α
9.4	52.2	3.6	
9.3	56.9	8.6	
9.5	37 3.7	19.0	
9.5	7.6	56.5	
9.5	15.8	44.1	
9.0	23.0	32.8	K
9.5	23.4	27.9	
9.5	30.5	30.2	
9.5	34.7	7.8	
9.2	49.2	56.9	
9.4	38 11.0	48.3	
9.5	16.5	7.8	
9.5	16.6	34.6	
9.3	24.0	47.6	
9.5	33.9	0.2	
8.5	37.4	5.1	K
9.5	38.2	31.7	
9.5	39.9	32.8	
9.5	42.2	20.4	
9.4	51.7	12.1	
9.5	39 4.6	36.6	
9.5	19.1	49.1	
9.4	40 0.1	22.1	
9.5	12.5	10.5	
9.5	29.6	40.2	
9.2	41.3	41.5	
9.1	41 0.2	26.4	K
9.5	2.5	38.0	
9.2	20.1	26.2	K
9.5	22.9	43.8	
6.8	24.2	6.1	L
9.5	34.0	26.4	α
9.2	48.9	14.6	
9.4	58.0	18.1	
9.3	42 16.8	57.1	
9.5	24.8	28.7	
9.5	28.2	51.2	
10pr.	+ 27.80	+ 1.38	

4161—4220

	19ᵐ	+13°		
m	′ ″	′		
9.0	42 29.9	15.0		
8.6	43.3	40.3		
9.4	46.1	41.1		
9.4	46.3	56.4		
8.8	43 1.7	43.0		
9.2	5.1	44.9		
9.5	10.0	55.6		
9.0	24.3	3.2		
9.3	25.2	28.6		
9.0	28.0	20.0		
8.8	32.8	22.5		
9.1	33.4	5.2		α
9.5	43.6	38.4		
9.2	44.1	24.3		
9.4	58.0	5.5		
9.5	44 0.2	9.6		
9.5	8.9	9.3		
9.2	16.0	55.8		
8.8	32.7	21.7	K	
9.4	45.5	45.0		
9.5	45 1.4	54.8		
9.3	8.4	8.5		
9.5	18.0	31.5		
9.5	18.1	16.5		
9.4	24.0	7.1		
9.5	46 35.4	49.2		
9.2	36.2	49.7		
8.0	47 1.0	56.9	K	
8.7	3.9	36.3		
9.5	11.2	36.2		
9.5	17.7	48.4		
9.2	28.0	50.9		
8.6	30.9	21.9	K	
9.5	40.6	43.9		
9.5	48.8	28.3		
9.3	49.6	11.3		
9.2	55.1	27.5		
9.0	48 6.4	56.5		Kb
9.4	14.2	57.5		
9.5	35.5	8.7		
9.5	40.5	3.0		
9.4	44.6	18.4		
8.9	59.5	13.1		
9.5	49 0.4	32.6		
9.5	11.3	6.0		
9.5	15.8	21.1		
9.5	37.6	47.5		
9.5	41.7	16.4		
9.5	43.9	55.5		
8.8	50.7	5.3		
9.1	53.9	8.5		
9.5	50 20.3	49.8		
9.3	24.4	23.8		
9.5	37.0	33.1		
8.2	46.3	44.6	B	
9.5	48.0	39.8		
9.5	51 9.6	20.8		
9.5	13.1	57.1		
8.4	18.6	54.6	K	
9.0	27.1	4.7	B	
10pr.	+ 27.85	+ 1.50		

4221—4280

	19ᵐ—20ᵐ	+13°		
m	′ ″	′		
8.9	51 27.5	1.2	B	
9.5	28.7	46.1		
8.7	36.3	5.5	K	
8.8	43.5	8.8	K	
9.5	48.6	51.4		
9.3	52.2	25.1	B	
9.2	52.9	19.0	B	
9.3	52 13.2	42.7	B	
9.4	26.9	36.2	b	
9.1	27.6	7.6	B	
9.4	45.1	13.8		
8.8	53 8.7	6.9	K	
9.5	27.0	17.3		
9.1	40.0	15.3	B	
9.3	42.2	30.4		
9.5	45.9	0.5		
9.5	54 0.3	15.3		
9.4	5.7	44.9	B	
9.4	8.0	54.6		
9.5	23.5	46 0		
9.3	32.5	15.8	B	
9.3	42.9	24.3		
9.5	56.0	53.2		
9.3	55 4.3	3.8		
8.8	6.2	44.5		
9.5	23.5	20.4		
6.5	36.7	31.1	R	
9.5	52.3	4.1		
8.9	56 17.3	15.0	B	
9.0	59.5	20.8		
9.4	57 30.3	32.8		
9.5	37.5	44.6		
9.4	52.6	13.7		
9.2	58.1	54.5		
8.5	58 2.9	40.8		
9.2	5.2	18.6		
9.2	6.5	18.3		
8.7	9.9	19.1	R	
7.5	21.2	20.8	K	
9.4	21.5	37.8		
8.9	25.9	54.6		
8.3	43.5	37.0		
9.5	59 12.5	48.7		
8.9	31.5	23.2		
9.4	40.4	37.1		
9.2	47.1	20.2		
9.5	47.4	11.8		
9.4	48.6	27.2		
8.8	48.9	4.2	K	
9.2	52.1	3.0		
9.5	0 2.2	55.5		
9.5	14.5	38.0		
9.0	48.1	12.4	B	
9.1	48.2	59.3	Bb	
9.5	1 8.3	52.1		
9.5	9.6	6.9		
9.3	17.2	4.5		
9.5	35.0	4.2		
9.5	55.3	51.4		
9.5	56.7	43.9		
10pr.	+ 27.92	+ 1.63		

4281—4340

	20ᵐ	+13°		
m	′ ″	′		
9.2	2 1.4	51.8		α
9.1	1.7	3.1		
9.3	3.2	2.8		
9.0	28.6	3.9		
9.5	29.5	33.9		
9.3	32.5	55.5		
9.2	35.1	0.2		
9.2	56.0	10.1		
9.2	57.2	23.9		b
8.8	3 4.2	53.0		
9.5	25.1	19.5	B	
9.5	42.5	43.8		
9.5	51.4	2.0		
9.5	4 13.6	2.5		
9.5	25.1	58.8		
9.5	28.5	21.1		
8.6	31.2	33.7	K	
9.5	36.0	37.5		
9.3	41.4	32.4		
9.2	45.4	34.9	K	
9.2	51.5	53.9		
8.8	5 0.9	48.0	B	
9.0	4.5	30.4	K	
9.5	18.3	23.5		
8.4	23.1	47.9	B	
9.0	39.4	34.4	K	
9.5	39 8	46.2		
9.5	45.9	2.7		
9.0	49.6	50.0		
8.7	50.2	33.2	K	
8.5	50.3	20.2	K	
9.4	6 17.3	1.9		
7.0	41.2	58.1	K	
8.9	41.8	5.0	K	
9.4	56.6	34.3		
9.4	7 1.8	20.8		
8.5	9.3	50.4	K	
8.5	15.7	15.7		
9.2	21.1	14.0		α
8.8	29.8	41.8	K	
9.5	37.7	42.4	B	
8.8	41.7	24.5		
9.5	42.8	35.8		
9.5	49.1	57.4	B	
9.5	8 5.7	43 5		
9.5	10.5	18.0		
9.5	11.9	11.3		
9.5	16.2	52.9		
9.5	23.7	1.3		
9.5	30.2	34.4		
9.5	33.6	16.8		
8.0	40.7	11.3	B	
9.1	46.0	39.2	Bb	
8.6	54.1	23.6	B	
9.5	9 7.0	14.0		
9.4	28.5	14.5		
9.5	29.5	3.8		
9.4	30.4	20.9		
9.5	57.6	17.4	B	
9.4	59.6	22.3	B	
10pr.	+ 27.98	+ 1.75		

4341—4400

	20ᵐ	+13°	
m	′ ″	′	
9.5	10 3.9	54.3	
9.4	7.1	56.7	
9.4	27.0	44.3	b
9.4	11 5.1	19.6	
9.4	6.4	25.0	
9.4	9.4	2.1	
9.5	19.9	10.0	
9.5	21.4	45.4	
9.5	23.7	55.8	
9.5	28.1	32.7	
9.5	37.2	11.3	
9.5	40.2	42.4	
9.3	12 21.1	2.7	
9.5	23.2	21.2	
7.2	24.2	56.1	B
7.0	36.5	55.8	K
8.3	36.9	28.0	L
9.5	59.3	17.7	
9 5	13 6.6	30.1	
6.2	12.2	5.8	L
9.5	16.7	11.5	
9.4	27.7	24.6	B
9.3	48.4	48.7	
9.3	14 2.9	4.3	
9.4	20.8	22.4	
9.2	24.6	23.4	B
9.0	25.1	53.5	
8.7	26.7	44.3	
8.5	53.9	13.8	B
9.0	58.2	22.6	
7.2	15 8.2	8.4	L
9.2	40.9	59.0	
9.4	50.1	17.2	
9.5	16 36.3	45.2	
9.0	47.7	32.2	K
9.3	54.5	56.2	B
9.2	56.7	45.2	B
9.4	17 1.8	1.8	
9.3	32.6	26.0	
9.0	33.5	44.7	B
9.1	36.5	46.8	
9.4	37.7	46.1	B
9.5	40.1	7.1	B
8.8	44.2	55.1	
8.8	45.2	3.5	K
9.5	18 11.2	2.2	
9.0	18.2	17.1	K
9.5	23.6	28.5	
8.8	33.2	7.2	K
6.5	19 14.2	26.5	K
9.2	21.0	46.0	
9.2	36.4	35.3	
9.2	20 2.3	51.4	
8.8	18.4	40.5	Kb
9.5	23.4	52.2	
8.5	37.5	9.7	B
9.5	40.8	59.7	B
9.5	42.2	34.7	
9.5	52.6	22.5	
7.8	57.5	58.9	B
10pr.	+ 28.05	+ 1.86	

m	4401—4460 20h	+13°		m	4461—4520 20h	+13°		m	4521—4580 20h	+13°		m	4581—4640 20h—21h	+13°		m	4641—4700 21h	+13°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′ ″	′	
9.4	21 7.4	24.7	B	9.5	29 31.0	15.3		9.0	40 57.5	54.0		9.2	50 18.8	10.0		9.2	6 23.9	36.3	a
9.0	12.1	28.5		9.4	34.0	1.6		8.6	59.2	35.4	K	8.8	32.1	47.8		9.5	47.8	23.7	
9.4	31.7	53.5		9.3	43.3	1.2		8.9	41 1.8	53.8		9.5	33.5	19.0		8.5	51.3	33.5	Kb
9.2	36.8	59.1	B	9.1	50.0	37.6		9.4	50.1	45.0		9.1	47.4	22.4	αBb	9.4	7 11.0	18.5	αB
9.4	39.2	24.5		8.8	52.2	31.5	B	9.0	56.2	16.2	K	9.1	49.4	29.1		9.3	13.4	47.7	B
9.5	43.2	0.3		9.5	58.0	2.1		8.6	42 2.0	4.7	K	9.1	51.3	57.0		9.2	39.9	14.8	a
9.4	49.1	19.9		9.4	30 5.0	59.6		9.5	4.5	26.9	B	9.5	59.7	4.8		8.0	44.8	32.7	K
9.3	59.2	3.7		9.5	53.1	20.9		9.5	11.8	26.7		9.5	51 12.9	31.1		9.4	8 20.8	27.8	
9.5	22 31.3	45.9	B	9.1	58.5	1.7		8.3	18.1	54.5		9.5	14.8	49.5		9.5	31.9	30.7	
9.5	43.9	25.4		8.3	31 4.2	27.4	B	9.2	47.6	36.0		9.0	56.0	36.1		8.5	36.2	17.7	K
9.5	46.9	3.2		9.5	4.9	1.2		7.3	48.6	26.0	K	8.9	56.1	45.7		9.2	57.5	0.1	K
9.5	56.6	11.0		9.5	15.5	53.7		8.2	43 2.9	1.6	K	8.8	52 12.9	54.3		9.0	9 23.9	41.5	
9.5	23 27.2	2.6	α	9.5	29.7	20.9		9.3	11.8	55.8		9.4	23.9	7.8		8.5	28.9	33.6	L
9.3	32.5	56.0		8.8	54.1	14.0		9.5	13.6	1.4		9.5	49.5	8.3		9.3	31.1	56.8	
8.0	45.2	20.5	Lb	9.0	32 1.2	25.8		9.0	14.9	5.3	K	9.5	56.2	4.6		9.0	38.7	8.7	K
9.0	48.4	34.4		9.4	26.7	24.4		9.0	34.7	31.9		9.0	57.1	28.7	K	8.3	42.8	11.8	K
9.0	48.5	2.7		9.5	33.0	28.9		9.1	48.2	31.9		9.0	53 50.1	23.1		9.5	52.9	47.4	
8.5	24 0.1	17.7	S	8.5	48.5	55.1	B	8.5	49.7	26.4	K	9.5	54 54.4	37.8	B	7.5	10 0.0	21.3	Kb
9.3	3.7	59.8		8.8	57.8	52.6		8.6	52.1	56.1		9.3	55 13.6	49.4	B	9.5	9.8	57.9	
9.4	*19.1*	*16.9*	B	9.0	34 2.1	28.2		9.5	44 0.2	14.1		8.6	19.7	52.4	B	9.5	12.3	32.1	
9.5	50.9	36.7		9.5	5.4	48.8		8.8	1.9	36.0	K	9.0	22.1	30.9		9.5	32.9	56.1	
9.5	51.6	57.3		9.4	30.1	32.0	B	9.4	3.0	7.6		9.5	23.5	18.8		9.4	41.9	5.3	
9.3	54.2	3.3	B	9.5	38.6	14.4		9.4	7.5	53.5	B	9.0	56 13.4	25.8		9.5	45.4	14.8	
9.4	55.7	9.5		9.5	38.6	19.7		9.4	16.3	20.5	B	9.3	31.9	10.3		8.2	11 0.9	55.9	K
9.5	25 11.6	24.5	B	9.5	44.9	6.0		9.4	18.7	59.5		9.4	52.4	43.8	B	9.5	18.8	30.4	
9.5	13.5	14.0		9.3	47.4	56.8	B	9.4	48.2	8.6		9.5	57 3.8	14.4		9.5	32.3	28.4	
9.5	14.0	46.0		7.0	48.6	17.5	K	8.2	51.9	1.5	K	8.0	14.2	48.4	L	9.5	36.9	48.8	
8.2	15.1	47.5	B	9.3	55.8	37.0		7.3	58.4	22.0	L	9.4	16.6	30.8	B	9.5	38.4	29.4	
9.5	16.7	51.8		8.4	35 4.9	15.1	P	9.2	45 3.4	46.1	α	9.5	42.8	49.5		9.5	47.3	4.0	
9.5	17.8	1.5		9.5	5.7	41.5		9.3	4.0	24.8		9.5	58 17.4	48.8		9.5	49.2	41.0	B
9.4	53.2	20.6		7.5	6.1	48.4	K	9.5	8.5	7.9		9.5	21.7	1.0		9.2	50.9	7.5	
9.5	57.6	55.4		9.4	9.0	56.0		9.3	19.5	56.2		9.5	28.2	9.0	b	9.5	12 1.8	18.9	
9.5	26 3.8	48.0		9.5	13.2	12.0		8.8	25.2	46.0		9.4	34.4	51.1	a	9.2	28.5	0.2	
9.3	5.8	28.4		8 7	45.2	4.4	K	9.5	27.1	35.3		9.5	59 1.9	57.5		8.4	42.3	44.6	K
8.3	6.9	27.4	B	9.4	52.9	40.3	B	9.0	39.2	15.1		9.4	13.8	34.0	B	9.4	13 1.9	27.6	
9.5	10.0	46.0		9.3	59.8	43.7		9.5	46 0.1	16.1		9.1	17.9	46.3	a	9.3	8.0	17.8	B
8.9	17.1	15.5		9.5	36 0.0	52.1		8.7	7.1	10.0		9.0	26.4	46.7	K	*9.0	14 11.0	44.5	L
9.1	37.7	23.5	B	9.5	0.0	51.5		9.5	8.7	55.6		9.2	33.7	49.0		9.2	12.3	24.1	
9.0	53.6	16.8		9.2	2.5	49.2		9.2	12.1	52.6	b	8.5	0 13.8	51.5	K	9.3	14.0	29.4	
8.7	55.0	47.3		9.5	25.4	5.4		8.8	17.2	26.2		9.4	31.9	38.7		9.2	15.4	2.9	K
9.0	55.2	34.6		9.3	29.9	0.8		9.5	29.9	6.7		8.4	46.3	46.0	Kb	9.1	19.1	12.4	B
9.5	27 11.0	54.2	B	9.5	44.6	25.6	B	9.5	34.6	41.8		9.4	1 5.4	56.8		9.3	27.4	49.1	
9.4	15.5	3.7		9.5	50.9	41.9		9.3	47 14.7	29.2		9.5	9.4	5.1	B	9.4	31.9	25.8	
9.4	20.0	14.4		9.4	53.2	32.8		9.5	24.6	53.5		9.4	21.3	45.9	B	9.5	15 2.8	33.2	
9.5	25.3	17.5		9.5	37 45.1	48.8		9.0	42.4	36.1	K	9.5	24.4	8.1		9.5	5.2	6.9	
9.4	29.8	41.3		7.5	47.9	2.6	K	9.4	44.8	33.0	B	9.5	26.0	57.0		9.5	32.7	22.0	
9.4	48.4	7 4		9.5	58 7	36.4		9.0	54.7	21.6		9.5	2 15.5	6.4		9.5	40.8	42.2	
9.4	48.5	38.3	αB	9.2	38 16.7	5.5	K	8.6	59.6	27.9	K	9.5	18.1	39.4		9.3	16 18.3	42.5	
9.5	58.7	20.8		9.5	20.6	38.8		9.3	48 9.2	19.5		9.5	21.8	2.3		9.0	23.0	42.0	B
8.8	28 8.6	31.6		9.4	21.7	51.9	b	9.0	29.7	47.0		9.4	51.9	33.2	b	9.2	26.7	37.8	B
9.5	12.7	30.2		9.5	43.6	5.8		8.5	41.2	35.8	K	9.5	3 20.4	41.2		9.5	41.4	54.7	
9.5	26.7	5.1		9.5	48.2	50.5		5.6	44.9	10.9	K	9.3	45.3	0.2		7.2	42.0	25.9	L
9.3	32.5	46.9		9.5	39 39.7	14.0		9.5	49 2.4	43.8	B	9.4	47.5	5.3		9.5	17 13.3	52.6	a
9.5	34.9	5.8	B	9.5	44.6	46.7		9.4	4.6	41.9	B	9.2	4 31.9	12.0	b	8.1	46.1	52.2	K
9.5	39.6	56.4		9.4	40 6.9	3.5		8.6	4.8	21.3	K	9.2	59.8	6.2		9.3	50.9	54.7	a
8.8	39.7	36.8	B	9.2	17.6	5.2		9.5	11.2	59.0	B	9.3	5 23.4	47.4		9.3	53.0	2.3	Kb
9.1	42.6	47.8	B	8.8	22.6	11.7	K	9.5	23.4	37.7		9.5	29.9	14.4		9.2	54.8	12.3	B
9.5	51.1	12.0		9.4	42.7	31.2		9.5	59.7	4.8		9.2	35.1	56.4	K	9.5	18 1.5	24.8	B
9.5	29 6.6	0.2		8.4	49.9	3.9	K	9.5	50 4.4	59.5		9.5	43.3	59.6		9.2	4.7	37.2	
9.5	24.8	1.5		8.8	50.8	56.9		9.5	6.3	52.2		8.7	6 7.7	36.0	L	9.0	8.4	55.7	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	*28.13*	*1.98*		*10pr.*	*28.22*	*2.09*		*10pr.*	*28.31*	*2.20*		*10pr.*	*28.43*	*2.34*		*10pr.*	*28.57*	*2.48*	

4676a			
9.5	14	0.9	45.0
4676b			
var	14	8	50.3

4701—4760

m	21h ′ ″	+13° ′	
9.5	18 17.9	21.7	a
8.7	30.8	50.4	K
9.5	31.4	39.8	
9.0	59.4	50.2	K
8.8	19 4.9	12.0	
9.4	10.9	6.7	a
9.5	36.4	27.6	
7.0	45.5	4.4	B
8.7	20 23.8	29.0	K
9.5	43.9	13.7	
9.2	48.6	52.7	b
9.5	49.3	59.6	
9.5	21 0.9	29 0	
9.3	3.0	5.5	K
9.3	6.8	35.1	
9.1	9.8	6.3	K
9.5	44.8	3.0	
9.5	48.3	9.2	
9.2	58.4	42.6	
9.4	22 16.9	14.4	
8.5	44.3	18.2	K
9.5	23 7.4	48.8	
9.2	24 4.8	42.4	R
9.5	12.3	14.3	
9.5	18.9	7.0	
9.5	35.8	19.7	
9.1	45.0	49.8	K
8.5	25 15.7	44.1	K
9.0	18.0	47.9	K
9.3	19.5	22.3	B
9.5	35.7	11.1	
9.5	36.9	49.5	
9.2	54.3	54.0	
9.3	54.3	7.7	a
9.5	26 26.8	46.7	
9.5	37.9	7.1	
9.1	56.3	9.0	K
9.5	27 3.4	11.6	
9.4	18.2	0.4	
8.1	26.9	16.7	K
9.5	28 16.9	46.0	a
9.5	23.8	4.8	
9.5	40.2	0.7	
9.5	41.9	38.0	B
9.5	29 7.4	42.2	
9.5	19.0	10.6	
9.5	20.4	16.5	
*9.5	30 40.9	35.3	B
9.5	59.8	35.2	
9.0	31 2.6	22.0	K
7.7	32.8	2.3	K
9.1	34.9	54.4	
9.4	43.4	25.5	
9.4	32 3.2	14.0	K
8.8	45.4	55.9	K
8.3	55.8	6.9	K
9.0	56.9	49 2	
8.8	59.8	14.0	K
9.1	33 21.9	1.5	
9.2	25.4	30.0	B
10pr.	+ 28.72	+ 2.61	

4761—4820

m	21h ′ ″	+13° ′	
9.5	33 40.3	9.0	
9.5	46.9	0.3	
9.2	54.3	15.1	K
9.1	34 10.4	32.5	
9.4	54.3	30.0	
9.1	56.9	11.6	B
9.0	56.9	35.6	B
9.5	35 16.6	12.1	B
9.5	23.5	39.5	B
9.5	52.4	52.6	
9.5	36 29.8	59.9	
9.4	37 6.5	58.1	B
9 3	26.8	32.8	B
9.5	42.2	55.9	
9.4	38 10.3	45.7	
9.5	20.9	10.3	
9.5	34.8	36.0	
9.5	38.1	58.2	
9.4	57.5	44.9	
8.6	39 8.8	22.7	L
7.0	47.2	3.1	K
9.4	41 32.4	59.4	
9.0	42 2.3	42.9	
9.4	30.5	20.9	
9.2	47.4	22.1	K
9.1	43 12.1	53.4	b
9.5	21.8	41.9	
9.5	35.4	10.6	a
9.5	48.2	7.7	
9.5	44 12.9	36.2	
9.2	21.4	21.3	
9.2	34.3	58.8	a
9.0	42.4	9.9	
9.2	46.3	41.5	
9.1	45 3.9	46.5	
9.5	3.9	2.8	
8.3	4.8	55.4	L
9.5	34.6	0.9	
8.3	48.5	1.3	K
9.2	46 24.8	7.1	a
8.7	56.7	17.8	K
8.7	47 4.0	4.6	K
9.2	9.9	30.1	
8.9	34.2	50.9	K
9.5	40.7	56.6	
8.8	45.4	52.1	K
9.0	48 7.0	28.0	
9.2	35.0	14.1	
7.8	48.1	9.5	K
9.4	49 23.0	1.7	aB
9.0	34.1	3.0	K
9.5	50 4.8	52.9	
9.4	29.3	49.0	
8.5	51 3.5	39.0	K
9.2	3.8	3.6	
6.5	25.5	20.6	Kb
9.4	52 13.0	38.0	a
9.0	35.0	39.7	Kb
9.5	51.5	13.1	
9.5	53 23.0	41.5	
10pr.	+ 28.93	+ 2.77	

4821—4880

m	21h—22h ′ ″	+13° ′	
9.4	53 27.2	56.1	
9.2	40.8	12.7	K
9.4	48.9	44.7	
8.5	54.6	14.5	K
9.5	54 18.0	40.8	
9.3	21.6	15.8	a
9.4	24.4	24.8	B
9.0	35.9	25.5	K
9.5	39.8	48.9	
9.2	55 1.8	5.7	K
9.5	8.9	7.9	
9.2	45.4	42.0	
9.3	46.1	9.7	B
8.0	53.9	22.0	K
9.5	56.9	39.5	a
8.8	56 21.4	41.0	Kb
9.5	46.6	55.3	
9.2	57 2.4	46.9	
9.4	11.9	26.8	a
8.6	23.4	8.0	
9.0	29.9	24.8	
7.2	58 12.9	47.2	B
9.5	28.5	51.0	
9.3	42.1	33.6	
9.5	50.9	23.8	
9.2	53.7	15.5	K
9.2	59 31.8	57.3	
9.5	53.0	34.1	
9.5	0 11.9	58.6	
9.3	27.4	25.1	a
9.2	48.4	43.7	
9.1	1 4.9	24.4	K
9.3	17.4	57.9	
9.2	25.7	51.3	B
9.5	2 45.9	44.8	
9.3	48.1	35.0	
8.8	52.3	5.5	Kb
9.5	3 12.9	11.5	
9.5	16.2	18.9	
8.2	16.4	3.2	K
6.2	20.0	54.5	K
8.7	45.4	14.1	K
9.5	4 10.9	48.0	
9.3	32.9	25.0	
*9.5	39.8	42.1	Kb
9.5	58.4	10.2	
*9.5	5 11.4	1.2	
9.3	11.5	53.9	
8.5	40.9	12.0	
9.5	52.4	38.2	
9.5	6 4.6	48.6	
9.5	17.4	14.0	
9.5	42.9	48.6	
9.1	48.1	10.2	K
9.5	7 3.2	35.1	
9.5	33.8	5.7	
9.5	8 21.9	36.6	R
9.5	25.3	9.0	
9.2	38.4	25.8	b
9.1	53.0	5.0	R
10pr.	+ 29.12	+ 2.89	

4881—4940

m	22h ′ ″	+13° ′	
9.4	8 57.4	19.5	
9.5	10 16.0	42.0	
9.5	24.9	30.0	
9.0	33.2	56.4	K
9.0	42.5	51.1	
9.5	55.8	4.1	
6.8	57.9	13.7	L
8.7	11 14.9	14.7	K
9.3	25.5	22.6	
9.4	30.4	41.0	
9.4	58.7	54.8	
7.5	12 16.9	21.6	K
9.0	29.3	52.4	K
9.3	49.4	16.9	R
8.8	13 7.4	31.4	K
6.5	36.4	18.9	L
9.5	14 21.4	24.5	
7.0	23.9	39.2	B
9.5	15 12.4	22.3	
9.5	13.7	30.7	
9.3	20.2	52.7	a
9.3	21.2	46.6	
9.0	41.5	53.4	
9.5	55.2	51.5	
9.5	59.4	9.5	
8.9	16 1.7	5.6	
8.8	23.9	5.0	
9.5	39.8	53.1	
9.5	42.8	0.1	B
9.3	52.3	8.5	
9.1	17 31.9	6.0	R
9.0	42.9	46.2	K
9.0	18 3.4	32.7	Kb
9.5	15.9	47.6	
9.5	24.1	7.5	
9.5	58.1	3.4	
9.5	19 33.9	19.2	
9.5	41.4	49.3	
9.5	56.8	58.8	
9.5	59.4	28.9	
9.5	20 39.0	38.6	
9.5	48.5	44.8	a
9.0	21 0.4	36.2	
9.2	40.4	40.3	
9.2	41.9	43.5	R
8.7	52.4	35.5	K
9.5	22 34.7	7.8	
9.5	41.8	43.8	
9.2	23 26.9	35.2	R
9.5	47.1	56.7	
9.5	24 3.3	56.3	
9.5	14.6	8.0	
9.5	38.5	41.2	
9.0	45.9	22.0	
9.2	51.1	3.6	
8.3	25 42.7	28.6	K
9.5	57.9	11.6	
9.5	26 17.4	24.8	
9.5	38.8	52.9	
9.1	27 0.2	52.8	Bb
10pr.	+ 29.32	+ 3.01	

4941—5000

m	22h ′ ″	+13° ′	
9.5	27 1.7	1.6	
9.3	13.9	54.5	
9.3	22.4	13.0	
7.0	28 5.1	51.2	L
9.1	5.4	34.0	
9.2	28.4	28.9	
9.0	32.9	41.0	
9.0	34.1	24.1	B
9.5	36.4	1.0	
9.3	38.4	16.5	B
9.5	29 11.9	30.0	
9.4	12.4	21.6	
8.9	14.9	58.2	K
9.1	46.2	47.0	
8.6	30 7.9	3.9	K
9.5	19.4	55.9	
9.1	42.1	30.6	K
9.0	47.4	1.6	
9.5	48.1	8.1	
8.5	31 21.9	27.6	K
9.5	27.4	27.8	
9.5	32.2	53.0	
9.0	42.4	37.3	K
9.5	32 0.6	3.9	
9.1	7.4	31.4	K
9.5	15.9	38.6	
9.2	25.9	24.4	K
9.5	33.9	13.7	
8.3	55.0	54.3	K
9.5	33 10.9	7.1	
5.8	42.1	47.2	K
9.3	51.4	15.1	
9.0	34 4.4	47.3	K
6.2	47.7	46.1	K
9.0	35 5.9	55.7	K
9.5	26.6	55.9	
8.0	29.5	17.3	K
9.5	36 21.8	46.5	
9.5	27.5	2.7	
9.5	28.3	12.6	
9.1	37 1.0	56.3	K
8.5	2.1	47.1	K
7.5	20.3	32.3	K
8.4	29.0	6.2	K
9.5	49.3	42.7	
8.4	49.8	17.8	K
9.3	39 7.3	53.1	K
9.3	59.3	44.7	
7.0	40 12.8	23.7	K
9.5	53.8	28.5	
9.0	41 20.3	6.4	K
9.3	32.3	4.0	K
9.0	37.3	31.7	
9.2	43 8	40.8	
9.5	42 19.8	39.2	
9.5	25.8	49.2	
9.5	44.3	11.0	
9.5	54.3	55.5	
9.2	56.3	27.9	
9.5	43 17.3	44.4	
10pr.	+ 29.53	+ 3.11	

4747 a
9.7 | 30 12.3 | 30.1 | B

4864 a
var | 4 36 | 38 |

4866 a
9.5 | 5 8.0 | 48.1 |

5001—5042

m	22ʰ	+13°	
9.2	43′ 20.4	50.4	
9.5	30.3	22.3	
9.5	39.3	32.5	
9.2	42.3	23.7	K
9.5	44 7.8	15.7	
8.0	11.3	12.9	K
9.5	22.8	50.6	
9.3	24.5	36.5	
9.5	35.0	51.3	
9.0	45 8.8	36.1	Kb
9.5	34.8	46.5	
9.0	43.3	30.8	
9.4	47.9	20.6	
9.4	50.9	17.6	
9.4	54.4	14.8	
9.5	46 27.8	3.2	
9.4	37.8	46.5	
8.5	58.8	36.5	K
9.5	47 18.8	14.7	
8.5	48 59.1	7.5	Kb
9.5	49 5.8	14.7	
9.2	10.8	7.6	K
9.3	17.0	28.9	
7.5	48.3	39.2	K
7.5	55.8	15.0	K
9.5	50 2.1	59.6	
9.2	54.4	56.0	K
8.0	51 1.8	56.3	K
8.8	22.8	17.4	K
9.5	51.3	44.7	
9.5	58.1	52.3	
9.1	52 33.3	36.1	K
7.7	40.3	5.2	K
7.7	57.3	9.5	K
9.0	53 3.5	51.7	
9.0	4.8	32.3	
8.0	6.8	15.4	K
9.5	42.3	35.9	
9.0	46.1	54.9	R
9.3	54 3.3	31.7	
8.5	33.0	56.3	K
9.5	35.8	8.8	
	+	+	
10 pr.	29.74	3.19	

5043—5084

m	22ʰ—23ʰ	+13°	
9.5	55′ 7.4	58.0	
9.4	15.0	10.0	
9.5	16.3	9.1	
9.5	20.8	36.8	
9.5	31.3	1.6	
9.5	39.8	6.0	
9.0	56 17.8	54.1	
9.5	57 5.3	17.8	
9.0	16.8	41.0	
9.3	29.5	51.7	
8.1	58 14.6	39.5	L
9.2	20.1	56.5	K
~~9.0~~	~~20.8~~	~~48.2~~	
9.5	59 23.8	40.1	
9.5	0 21.6	0.6	
9.5	1 24.2	27.3	
7.7	2 44.2	39.4	K
9.5	3 16.3	17.5	
9.5	19.3	29.7	
9.3	38.3	24.1	R
9.5	43.8	35.0	
9.4	4 5.0	1.1	Kb
9.5	24.1	56.8	
9.2	44.7	17.5	R
9.5	56.7	2.5	
9.5	58.8	5.7	
9.4	5 3.7	42.9	
9.2	19.7	53.3	K
9.5	34.2	25.2	
9.4	6 6.8	38.4	
9.3	18.3	35.6	
9.2	46.5	54.4	K
9.5	54.3	37.0	
9.5	59.2	45.3	
9.0	7 41.8	29.0	
9.0	45.7	13.4	R
9.5	8 0.8	7.1	
9.2	5.7	46.7	
9.5	34.8	58.6	
9.4	39.2	42.5	
9.3	47.7	50.3	
9.0	9 28.7	32.8	
	+	+	
10 pr.	29.94	3.24	

5085—5126

m	23ʰ	+13°	
9.4	9′ 50.0	7.9	
8.2	10 5.4	54.4	K
9.5	19.2	44.7	
9.5	22.7	33.6	
8.3	52.0	55.4	Kb
9.5	11 53.3	8.5	
9.5	55.8	43.3	
9.5	12 47.0	8.6	
9.4	47.1	4.3	
9.4	13 19.7	41.5	
9.5	30.6	4.3	
8.5	40.8	31.3	R
9.5	14 18.5	5.2	
9.5	15 4.7	44.7	
9.5	34.0	0.4	
9.5	39.6	57.8	
9.5	43.3	8.8	
9.5	44.8	17.8	
9.5	47.2	27.3	
9.5	16 16.3	41.1	a
8.0	17 7.2	41.0	K
9.5	39.2	24.1	
9.5	42.7	50.8	
9.5	47.3	30.4	
9.5	18 43.7	9.2	
9.5	19 32.2	45.0	
9.4	32.7	1.6	
9.2	20 7.0	12.3	Bb
9.5	7.8	18.9	
9.5	14.7	56.0	
8.8	21 3.5	34.5	
9.5	46.8	7.9	
8.7	54.8	36.0	R
9.5	22 17.2	30.0	
9.5	24.3	14.2	
8.7	30.4	5.8	R
9.0	46.8	30.7	K
9.2	50.6	10.7	K
9.5	56.8	28.3	
9.5	24 2.5	20.3	
9.5	4.2	30.0	
9.4	10.7	17.5	
	+	+	
10 pr.	30.12	3.28	

5127—5168

m	23ʰ	+13°	
9.3	24′ 14.0	37.2	
9.5	20.7	49.8	
8.7	22.7	32.2	B
9.1	25 20.1	10.6	K
9.1	26.2	32.2	b
9.5	55.8	37.0	
9.5	58.3	56.5	
9.5	26 0.9	10.5	
9.5	52.2	25.2	
9.5	57.3	52.3	
9.0	27 37.8	29.0	
8.5	40.2	38.7	
9.5	55.2	41.2	
7.6	28 17.7	48.1	L
9.5	27.8	38.4	
9.0	30.7	27.3	
9.0	29 32.8	44.7	
8.3	48.3	38.7	B
8.2	49.1	58.1	K
9.3	30 24.3	12.9	Kb
9.0	31 16.3	38.7	K
9.5	46.8	18.5	
9.5	49.2	44.0	
9.5	32 20.3	15.4	
9.5	21.1	40.2	B
9.5	23.0	43.4	
9.0	33 12.0	11.8	K
9.0	14.8	28.0	
8.3	26.8	9.2	K
8.3	31.2	39.4	
9.0	59.7	49.5	
8.4	59.9	58.5	L
9.5	35 43.3	45.0	
9.0	37 12.7	15.4	
9.0	19.2	18.5	
9.5	40.5	25.0	
9.5	44.0	38.2	
9.4	38 0.3	45.0	
8.3	5.0	52.7	K
9.5	6.3	22.1	
8.7	14.3	55.7	K
9.5	19.8	14.0	R
	+	+	
10 pr.	30.32	3.31	

5168 a

9.5	38 25.0	13.8	a

5169—5209

m	23ʰ	+13°	
9.2	38′ 56.8	56.5	K
9.5	39 6.8	13.6	R
9.5	40 21.2	41.2	
9.2	42.3	40.1	b
9.5	42 15.2	29.0	
9.5	30.2	49.6	
9.5	43 2.2	28.0	
9.1	12.4	6.5	b
9.5	51.7	18.9	
9.5	44 2.2	32.2	
9.5	46.8	17.5	K
9.5	56.3	16.8	
9.5	46 13.4	18.0	
9.2	19.4	9.7	R
9.1	32.3	49.6	b
9.2	51.8	22.4	K
8.7	47 10.8	47.8	
9.3	48 34.1	31.7	
9.3	50 8.9	1.5	
9.5	29.9	7.1	
9.3	33.0	44.6	Kb
9.5	33.5	59.7	
9.5	51 2.4	10.1	
9.5	52.0	24.8	K
9.3	55.9	23.3	K
9.5	52 49.5	31.8	
9.3	53 47.0	9.2	
7.9	54 12.9	50.9	L
9.3	27.5	36.0	
9.5	55.6	6.7	Kb
9.5	55 14.5	32.9	
8.5	16.6	6.9	K
7.0	56 28.0	34.6	K
8.7	50.0	16.0	K
8.8	57 43.9	8.0	K
9.5	58 29.5	12.6	
9.5	40.9	55.9	
9.4	53.9	0.1	
9.2	59 21.9	15.6	K
9.5	41.5	29.7	
8.7	58.8	51.6	K
	+	+	
10 pr.	30.58	3.34	

Zone +14°

1—40				41—80				81—120				121—160				161—200			
	0h		+14°		0h		+14°		0h		+14°		0h		+14°		0h—1h		+14°	
m		′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	0	6.6	39.0		9.5	17	32.4	28.3	9.5	30	33.2	10.4	8.3	42	52.9	41.7	R	8.5	56	28.1	26.9	K
9.5		37.4	59.7		8.4	18	0.9	46.2	K	9.5	31	14.8	56.7		9.5	43	9.6	25.0		9.5	57	11.8	50.2	
9.5		40.4	13.0		9.5		12.0	53.1		9.4		47.6	28.8		9.2		39.5	45.9	K	5.5		26.8	9.8	Lb
9.0	1	47.1	35.5	Kb	9.5		35.7	14.2		9.3		55.0	22.2	K	9.5	44	4.7	6.9		9.0		31.0	33.9	K
9.5	2	37.6	32.0		9.5	19	21.4	31.8		9.5	32	20.0	8.3		9.5		37.0	47.8		9.5		34.2	6.1	
9.2		55.2	31.6	K	9.5		27.7	5.5		9.2		22.2	14.5		9.4		47.0	5.3		9.5		43.5	11.0	
8.8		59.5	36.4	K	9.5		35.3	10.2		9.2		27.6	45.1		9.2		59.1	13.2	b	8.8		50.2	37.6	K
8.2	3	4.9	26.4	K	9.2		53.6	12.8	b	9.0		37.4	5.8		9.5	45	1.0	47.2		9.0	58	7.8	12.4	
9.1		45.5	28.8	K	9.2		58.4	51.3		8.2		59.5	27.7	K	9.5		11.4	58.2		7.7	—	17.7	35.7	K
9.5	4	0.7	14.1		9.5	21	17.1	13.8		9.3	33	0.3	16.7	K	9.5		28.7	59.5		9.5		33.0	42.3	
8.6	5	18.6	46.0		9.4		35.7	22.3		8.7		30 3	1.1	K	9.5		43.0	38.8		9.3	59	10.0	56.6	
9.3		24.6	55.6		9.0		56.4	11.5	B	9.2		40.7	9.7	K	9.5	47	3.5	51.8		8.5	0	32.5	21.4	K
9.5		44.2	39.6		7.8	22	48.9	59.3	Kb	9.5	34	1.1	5.1		9.5		4.0	21.5		9.5	2	5.4	49.1	
2.5		47.1	22.9	K	9.3		59.6	8.7		9.5		23.4	9.6		9.5		18.0	15.8		9.5		11.0	28.4	
9.2	7	38.4	17.0	b	9.5	23	1.9	36.2		8.5		45.6	16.1	K	9.5		21.2	32.9		6.4		31.4	53.6	K
9.5		42.5	11.1		8.9		2.9	50.7		9.4	35	47.6	36.5		9.5		34.8	58.8		9.1		48.2	54.0	K
9.5	8	5.2	28.5		8.7		15.7	49.0		8.3		50.7	18.1	K	9.5		44.5	0.8		9.5	3	6.8	1.3	
9.5		10.6	23.6		9.5	24	41.4	12.6		9.5	36	0.6	22.6		9.5	48	32.1	11.7		9.0		8.8	38.4	K
9.5		11.7	57.0		9.2		41.7	34.0	b	9.3		18.3	21.6	K	8.5		35.0	51.8	K	9.5		14.0	18.8	
9.5		39.4	22.0		8.5		43.9	55.1	K	9.3		28.7	25.8		9.1		43.2	9.6		9.4		19.8	31.4	
9.5		45.6	49.0		9.2		50.2	52.3	K	9.5		45.0	10.5		8.7		49.4	11.9		9.5		19.8	23.3	
9.5	10	27.9	31.4		9.2	25	53.1	46.5		9.5	37	2.2	9.7		8.6		50.8	23.5		9.2		21.8	34.5	B
9.2		37.9	52.1		9.5	26	18.2	32.3		8.6		23.3	6.5	K	9.3		54.9	49.1		9.5	4	18.0	14.6	
9.5		38.4	26.9		9.5		26.4	24.8		9.5		43.0	46.9		9.5	49	32.9	28.4		9.5		27.5	15.3	
9.3		56.2	6.2	K	9.0		36.7	23.9	K	8.2		43.7	22.3	K	9.2		42.0	24.4	b	9.1		35.7	29.0	b
9.5	11	32.9	47.3		9.5	27	10.4	18.5		9.5	38	35.6	56.3		9.5		46.8	48.8		9.5		55.0	21.5	
8.8		34.5	13.6	K	9.5		11.9	1.2		9.5		37.6	0.3		9.5	50	3.4	58.2		9.2	5	0.5	46.4	
9.5		51.9	43.2		9.2		39.9	4.8	K	9.5		37.6	1.5		9.5		38.5	24.5		9.5		24.8	59.0	
9.5	12	29.2	47.6		9.1		42.7	27.1		9.5		43.3	46.2		9.5	51	17.7	56.2		9.2		45.9	36.8	b
9.5		30.7	14.7		9.5		50.8	50.4		9.5		53.5	5.9		9.5		50.7	0.5		9.5	6	17.3	6.8	
9.5		56.4	7.3		9.3	28	16.3	3.7	K	5.0		59.9	41.0	L	9.0	53	0.6	7.0		9.4		33.9	44.0	
9.2	13	2.9	30.2	K	9.5		22.4	35.4		9.4	39	13.5	13.1		9.0		1.7	3.6	B	9.5	7	20.5	25.7	
9.5		31.7	1.3		9.1	29	8.2	7.3		9.5		25.1	9.0		9.5		10.3	35.6		9.5		40.0	35.3	
9.5		33.1	20.5		9.5		9.7	54.3		9.0	40	2.3	25.0	K	9.5		10.3	48.1		9.5	8	4.0	25.6	
9.5		40.3	51.5		9.2		14.8	10.4		9.5		9.6	4.2		9.5		39.6	49.9	b	9.5		38.2	9.3	
9.5		52.0	12.3		6.1		16.3	26.6	L	9.5		11.0	45.5		9.5	54	12.3	5.8		9.0	10	10.8	52.9	B
9.5	14	40.5	26.1		9.5		21.4	56.0		6.8	41	30.0	1.2	K	9.5		37.8	50.5		9.3		32.3	42.9	
9.3		55.2	35.8	K	8.3		33.9	20.6	Lb	9.5		46.0	53.3		9.5	55	14.6	28.3		9.5		38.9	5.7	
9.5	15	56.1	27.1		9.5	30	14.8	32.2	B	9.5	42	22.3	9.5		9.5		46.0	6.6		9.5		59.1	5.7	
9.5	17	26.6	30.9		9.5		26.5	25.9	B	9.3		40.4	31.5	K	9.5	56	0.4	26.2	a	9.0	11	11.6	45.2	
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.85	3.34		10pr.		31.09	3.32		10pr.		31.27	3.30		10pr.		31.45	3.26		10pr.		31.66	3.22	

201—260					261—320					321—380					381—440					441—500				
	1ª		+14°			1ª		+14°			1ª—2ª		+14°			2ª		+14°			2ª		+14°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	11	28.2	52.0		9.0	35	9.7	10.6		8.8	51	47.9	53.0		9.4	13	12.7	53.4		9.5	32	15.5	9.5	
8.5		43.6	2.2	K	9.5		27.5	38.6		9.1	53	2.1	4.6		9.1		46.6	4.2	*b*	9.5		28.0	11.0	
9.5	12	18.8	13.1		9.0		53.9	20.2		9.5		5.6	19.2		7.6		52.5	51.6	K	9.5		30.0	57.4	
7.2		58.3	57.0	K	9.3	36	7.2	38.0		9.5		6.6	58.2		9.5	14	25.5	29.5		9.0		49.3	23.2	
9.5	13	23.5	55.0		9.3		21.4	30.1		9.3		30.5	50.6		9.5		39.5	9.2		9.5	33	3.9	39.9	
9.1		28.8	32.9		9.3		46.8	9.1		6.9	54	1.0	21.5	K	9.2		51.3	9.9	*R*	9.5		45.5	20.4	
9.4		55.1	42.2		9.0	37	12.9	5.8		9.4		4.6	47.6		9.0	15	20.2	44.6	K*b*	9.5	34	17.0	24.6	
9.3	14	3.8	26.7		9.0		56.7	59.4	B	8.3		38.7	48.6	K*b*	8.7		20.7	41.0	K	8.0		30.5	36.0	K
9.5		11.9	42.9		9.5	38	4.0	32.6		9.3		55.0	3.6		8.8		22.9	44.7	K	9.3	35	6.5	17.3	
8.2		15.7	25.5	K	8.8		5.7	15.7		9.5	55	41.2	51.1		8.9		30.0	10.8		9.5		21.5	11.0	
9.2		57.4	3.5		9.4		32.4	42.2		9.2		45.2	0.2		9.2	16	8.5	3.4		9.5		26.5	58.0	
9.2	15	17.4	2.9		8.9		36.8	59.1	K	9.5	56	35.6	59.3		7.3		31.9	51.6	K	9.0		46.8	39.8	K
8.7	16	18.1	33.6	K	9.5	39	0.0	13.4		9.2		38.5	13.1		8.9		55.9	0.4	K	9.5		55.0	10.7	
9.5		46.5	45.5		9.5		0.2	54.2		9.2		39.4	55.8		9.3	17	0.1	14.8		8.5	36	0.9	56.6	
9.5	17	19 0	5.9		9.5		12.0	45.7		9.1		44.6	31.0		9.1		9.8	23.6	*b*	9.2		5.9	16.6	
9.5		45.0	59.1		9.5		13.0	50.5		8.5	57	8.0	35.6	K	9.4	18	0.0	9.8		8.5		9.9	27.7	K
9.4		46.1	45.3		9.4		41.0	11.9	B	8.5		31.6	50.5	K	9.2		23.4	46.2		6.0		34.8	42.3	L
9.5	18	38.2	9.3		9.2	40	2.5	6.1		9.5	58	15.2	52.0		9.5		27.0	44.8		9.1		41.4	57.8	
9.5		39.9	4.9		9.5		15.7	16.7		9.3		26.8	22.5		9.1		28.2	50.7	*b*	8.8	37	0.5	5.9	
9.5	19	18.8	51.3		9.5		25.1	43.0		9.3		56.0	3.6		9.1		36.0	42.8		9.2		19.0	9.1	
9.5	20	0.5	18.0		9.4		38.0	8.4		9.5	59	0.5	35.2		9.2		58.9	24.9		9.5		36.9	37.1	
9.3		14.7	25.0	*b*	9.5	41	49.3	7.0		8.5		42.1	53.5	K	9.5	19	13.2	20.0		7.8	38	17.9	24.2	K
9.4		54.6	8.0		8.8	42	41.3	29.0	K	9.5	0	12.1	25.9		9.5		15.5	6.2		9.5		25.5	4 1	
9.5	22	48.9	37.8	B	9.5		51.6	1.3		9.5		36.8	26.2		9.5		28.7	34.1		9.5		41.3	9.0	
9.3		56.2	36.6	B	8.9	43	28.5	2.5	K	9.1	1	1.2	41.3		9.5	20	3.8	29.8		9.5		49.2	45.6	
8.0	23	3.1	16.4	B	9.0		38.5	36.5	B	8.9		9.8	49.0	K	9.2		31.3	6.7	*b*	8.3	39	9.9	42.3	K*b*
9.1		4.6	2.6	*aB*	9.5		39.3	14.2	B	9.5		19.0	24.5		9.5		52.8	44.6		7.8		38.3	37.1	K
8.7		5.1	51.5		9.4		52.3	12.8	B	9.0	2	4.4	9.8		8.5		58.5	57.1	K*b*	8.5		47.0	11.4	
9.5		7.7	49.5		9.5	44	2.1	12.3		8.5		11.4	47.5	K	9.3	21	14.5	28.4		7.5		59.5	53.8	K
9.0		41.0	15.8		9.3		10.7	55.5		8.3		22.6	19.6	K	8.9		57.0	43.6		9.0	40	33.0	48.3	
4.0		44.0	35.4	L	9.2		11.2	49.2		9.4		31.0	3.5		9.0	22	27.6	40.7		8.2		48.1	0.4	K*b*
8.8		59.8	20.7	K	9.2		29.3	14.8		8.4		37.9	28.2	K	8.9		39.9	25.6		9.5		52.2	35.3	
8.2	24	3.8	53.4	K	9.4		32.5	5.3	B	9.5	3	15.8	18.4		9.4		40.0	39.0		9.5	41	7.8	8.8	
9.3		22.0	0.6		9.1		46.2	29.6	B	9.4		33.4	50.2		9.5	23	0.0	26.3		9.5		33.9	42.6	
9.3		51.6	21.4		8.9	45	7.3	53.1		9.0	4	20.9	0.0	K	9.5		15.0	16.9		9.5	42	19.8	16.9	
9.0	25	17.8	56.9		8.3		15.0	9.6	K*b*	9.5		31.8	30.1		9.2		18.9	51.4		9.5		30.5	38.6	
8.8	26	4.3	50.9	K	9.5		16.4	18.7		6.0	5	10.9	35.1	K*b*	9.5	24	34.0	11.1		9.5		34.5	10.7	
8.5	27	17.9	32.3	K	8.2		26.4	42.5	K	9.3		29.6	48.0		8.9		42.0	31.1	B	9.5	43	5.2	25.3	
9.0		42.5	12.2		9.5		52.3	55.4		9.5		42.0	8.0		6.5		58.9	24.0	K	9.5		21.8	38.1	
9.5	28	20.6	36.7		9.5	46	0.2	10.4		9.3	6	22.6	25.0		9.2	25	8.5	49.7		6.0		30.5	28.1	K*b*
9.0		31.4	15.6		9.2		32.5	59.6		9.2	7	19.3	33.4		8.7		34.5	56.4		9.5	44	9.5	45.1	
9.3		50.7	3.3		8.0	47	25.1	38.7	L	8.9		24.1	9.7	K	9.5		44.3	6.0		8.5		24.6	5.4	
8.7		59.0	30.8		9.5		29.4	53.8		9.5		42.4	9.2		9.0		45.6	3.2		9.5	45	37.9	13.2	
9.2	29	21.7	20.9		9.5		33.2	16.2		9.5		44.8	33.0		9.5	26	59.2	44.8	K*b*	7.6		39.5	4.3	K
9.5		34.0	7.2		9.4		35.4	45.8		9.5		53.6	38.3		9.5	27	1.0	17.0		8.6		52.7	49.6	
9.4		41.7	11.1		8.8		52.7	22.4		9.5	8	5.7	6.8		9.3		53.2	37.1		9.5		59.2	23.4	
9.1		43.5	8.0	*b*	9.5	48	9.0	46.4		9.2		18.4	48.2		9.5	28	9.9	55.1		8.9	46	15.9	54.0	K
9.0	31	10.0	0.6		8.8		16.5	23 7		9.2		28.2	23.3	*R*	8.7		13.8	30.5	K	9.5		38.0	52.6	
9.1		43.3	3.8		9.3		34.3	39.1		9.5		38.5	2.8		9.5		32.5	38.9		9.0		54.5	18.0	K
8.7		57.8	42.1	K	9.0		41.1	26.5		9.5		55.2	45.8		9.0		45.5	32.3	K	8.8	47	8.3	9.6	K
9.0	32	7.5	31.4	K	9.2		42.3	36.1		9.2	9	16.3	44.6	*b*	9.4	29	18.2	23.2		9.5		16.5	10.1	
9.5		9.2	46.1		8.7		56.1	10.7		9.5		21.0	18.4		9.5		39.0	16.3		7.0		40.6	6.6	K
9.0		9.3	31.4	K	8.7	49	0.5	21.9		9.3		58.0	13.7		9.5		58.0	45.6		9.1		52.2	46.2	
9.5		14.7	0.4	B	9.5		39.5	3.5		9.5	10	22.9	12.9		9.5	30	6.0	38.6		9.3	48	10.9	46.2	
9.4		46.9	17.4		9.1		42.9	14.7	*b*	8.8		59.3	48.4		9.4		18.3	8.7		8.8		52.1	0.6	K
9.3		49.2	26.0		9.1		59.1	50.1	*b*	9.1	11	3.4	35.4	*b*	9.3		33.9	20.7		8.9	49	9.9	32.2	K
8.6		55.1	53.3	K	9.5	50	25.4	3.4		9.5		16.0	3.8		9.5		52.9	58.2		8.9		20.3	6.4	
9.0	33	45.9	1.3		9.1	51	2.5	36.5	*a*	8.7		29.2	13.3		9.0		55.8	48.2		9.5	50	15.0	43.0	
9.3	34	44.0	24.4		9.5		21.9	19.3		9.5		34.8	10.4		7.5	31	2.9	13.8	K	8.8		37.9	33.6	K
9.5	35	5.0	0.9	*a*	8.5		39.8	34.2		9.5	12	32.8	51.6		9.5		21.7	6.3		9.5	51	6.8	40.6	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*31.95*	*3.12*		*10pr.*		*32.24*	*3.00*		*10pr.*		*32.48*	*2.87*		*10pr.*		*32.73*	*2.72*		*10pr.*		*32.96*	*2.55*	

DB 6.0 1855 BD ed 1903

-4° +14°

501—560

m	2m—3m	+14°	
9.0	51 14.8	36.1	
7.5	52 53.9	27.4	K
8.0	53 15.5	24.9	K
9.4	54 19.0	22.6	
9.5	56 16.8	52.3	b
9.5	18.0	50.4	
9.4	18.9	16.3	
9.5	43.2	2.9	
9.0	57 5.3	0.6	K
9.5	58 27.6	46.7	
8.6	37.2	12.0	K
9.5	58.6	0.0	
8.0	59 13.9	38.1	K
9.3	30.5	55.4	R
9.5	36.9	46.1	a
8.7	43.9	5.6	K
9.5	51.2	24.0	
7.8	0 40.7	47.8	L
9.5	42.2	28.0	
9.5	46.1	6.3	
9.5	1 19.2	38.3	
9.5	20.7	56.5	
9.3	42.0	47.2	
9.0	56.7	48.8	
9.3	2 45.2	34.0	
8.7	45.3	47.7	
9.5	3 4.7	8.7	
9.5	5.6	54.9	
9.5	20.3	1.7	
9.3	23.7	52.0	
9.5	4 4.1	36.5	
9.5	4.2	1.7	
9.5	23.1	28.2	
9.5	5 16.0	52.7	
9.5	34.1	55.0	
9.4	38.2	13.9	b
9.2	6 46.9	57.4	a
9.5	51.1	51.6	
9.5	7 6.5	20.8	
9.5	8.6	5.7	
9.5	8.8	48.1	
9.4	8 26.4	3.4	
9.3	45.7	10.8	
9.5	54.8	42.7	
9.0	9 7.5	22.4	K
9.5	7.6	57.9	
9.3	37.7	33.6	
9.5	37.8	0.1	
9.5	10 15.0	53.8	
7.3	23.2	38.9	Kb
9.3	12 4.7	18.4	Bb
9.5	31.1	6.9	
9.5	42.3	4.7	
9.5	13 25.4	0.3	
9.5	14 7.6	3.8	
9.5	34.7	52.0	
9.5	15 34.0	38.5	
9.5	16 27.1	45.1	
8.3	39.9	28.4	K
9.5	17 28.2	58.6	
10pr.	+ 33.20	+ 2.32	

561—620

m	3m	+14°	
9.5	17 51.7	37.8	
9.0	19 1.3	56.6	
9.5	31.2	48.6	
9.5	20 9.1	39.2	
7.3	53.5	29.4	K
9.0	21 16.7	44.6	
9.5	22 0.6	58.4	
9.5	38.7	14.5	
9.3	23 19.1	12.0	K
9.5	43.1	33.0	
9.5	24 27.0	45.2	
9.5	25 13.6	41.4	
9.3	21.2	1.6	
9.5	28.1	53.0	
8.3	32.1	11.0	L
9.5	38.6	35.2	
9.5	26 30.7	6.9	
9.5	27 22.4	51.2	
9.5	42.1	56.4	
9.5	28 8.2	52.6	
9.3	8.7	47.4	
9.5	22.1	39.9	
9.5	23.9	38.4	
9.5	40.1	49.6	
8.3	29 15.1	37.0	Kb
6.5	39.8	56.4	Kb
8.8	30 7.7	41.1	K
8.0	19.6	40.4	K
9.5	34.1	48.6	
9.3	31 23.7	0.8	
9.3	32 6.6	35.2	
8.8	9.2	42.9	
9.5	41.7	46.8	
9.5	33 9.5	4.9	
9.3	17.2	25.9	
9.4	19.4	8.6	
9.3	53.4	27.3	
8.8	34 5.7	19.3	K
9.4	7.8	5.1	a
9.0	32.7	33.5	K
9.5	33.4	41.3	
9.5	40.1	37.0	
9.5	35 13.2	25.6	
8.5	53.9	9.0	K
9.5	36 49.5	10.8	B
9.5	37 12.7	5.1	
9.0	18.9	27.0	R
9.5	38 13.1	49.1	
8.6	39 16.5	5.5	Kb
9.5	37.5	17.7	
9.3	40 22.5	43.7	R
9.2	40.1	57.4	
8.3	50.2	31.7	K
8.5	41 15.9	37.9	K
9.4	20.6	6.3	
9.0	42 33.6	2.5	K
9.5	38.9	53.8	
8.7	57.0	1.8	Kb
9.3	43 21.8	14.0	
9.4	44 2.5	53.0	
10pr.	+ 33.48	+ 2.01	

621—680

m	3m—4m	+14°	
9.3	45 0.3	44.8	a
9.5	11.2	21.3	
9.5	24.9	40.3	
8.3	39.5	45.1	K
8.8	53.8	42.9	K
9.5	46 9.5	13.0	
9.5	47 57.0	4.8	b
9.5	49 10.0	55.8	
9.2	20.2	0.3	
8.4	32.5	26.5	
9.3	41.3	49.8	
9.2	43.1	53.2	
8.1	50 25.5	40.0	K
9.2	57.5	53.7	
8.9	51 2.4	1.4	
9.5	41.9	41.7	
9.5	48.2	24.5	
9.5	53 27.2	47.6	
9.5	48.5	16.8	
9.5	52.5	31.7	
8.9	54 15.9	43.6	
8.1	28.4	39.4	B
8.0	58.6	4.3	Kb
9.5	55 1.3	41.3	
9.5	17.3	56.4	
8.0	56 4.2	36.6	K
9.5	11.5	23.1	
9.5	57 12.3	32.0	
9.1	54.0	9.7	B
8.0	58 14.3	0.5	K
9.5	31.2	3.8	
9.4	36.8	28.1	
9.5	48.5	56.2	
9.5	50.2	14.4	
9.0	59 8.9	20.2	
8.5	24.2	35.5	
6.5	30.1	45.8	B
9.5	0 13.3	5.3	
9.5	40.6	10.3	
9.5	1 34.0	50.0	
8.8	2 28.5	51.9	K
9.5	3 13.0	10.8	
8.8	4 2.0	34.3	K
8.9	32.1	16.3	K
9.5	49.0	22.2	
9.2	55.8	11.1	a
8.7	5 21.6	11.3	K
9.5	23.6	15.6	a
9.5	47.6	8.3	
9.1	55.5	31.9	R
9.5	6 2.6	33.6	
7.5	9.9	10.6	K
8.5	15.5	15.3	K
9.3	19.5	5.9	
9.3	8 48.6	32.7	B
9.4	49.5	45.4	
9.3	10 5.0	39.2	
9.0	12.9	11.0	Kb
8.0	11 22.7	20.1	K
8.8	44.7	31.4	B
10pr.	+ 33.70	+ 1.69	

681—740

m	4m	+14°	
9.3	11 46.7	39.5	B
5.9	12 24.7	44.4	L
9.5	35.4	16.7	
9.3	38.7	48.1	
9.5	13 18.6	30.1	
9.3	24.7	25.0	
7.4	25.8	4.3	L
9.5	14 10.5	54.4	
8.5	27.7	34.0	K
7.8	34.0	43.6	K
8.8	15 21.1	18.7	K
9.0	42.3	3.9	
7.8	16 2.0	25.3	K
9.2	8.3	23.2	
9.3	24.9	6.5	
8.9	17 3.6	16.0	
5.0	18 26.7	24.3	K
9.3	19 20.5	28.4	
9.3	31.4	5.4	
9.3	39.0	49.4	B
9.1	20 8.8	45.7	B
6.5	12.0	24.0	K
9.1	18.5	43.9	R
8.5	34.5	31.5	K
9.3	46.6	17.4	
9.5	22 4.9	3.6	
8.9	6.5	18.3	
9.0	17.0	28.1	
9.5	35.8	2.0	
9.3	37.7	52.7	
7.3	54.6	47.1	Kb
8.0	58.6	23.2	K
9.0	23 17.2	23.5	
9.4	22.6	17.4	B
9.0	31.1	21.9	K
9.5	42.2	21.9	B
9.5	25 3.8	53.0	
9.4	15.0	56.2	
9.5	21.6	55.9	
5.4	39.2	32.4	K
8.5	44.1	50.8	K
8.7	26 5.9	40.0	K
9.4	22.1	44.3	
9.5	28 3.8	53.0	?
9.5	33.5	42.0	
7.5	40.7	57.9	K
9.3	29 0.8	5.7	B
7.9	17.7	51.0	Kb
8.7	20.7	0.2	
9.3	32.5	12.3	
9.4	30 39.1	23.3	b
9.5	44.6	45.7	
9.5	31 58.6	15.3	
9.5	32 7.6	16.5	
8.7	33 13.8	32.6	K
8.5	52.7	3.0	K
9.5	54.9	8.7	
6.7	34 46.8	32.1	K
9.5	35 13.0	5.4	
9.5	15.0	33.4	
10pr.	+ 33.87	+ 1.37	

741—800

m	4m	+14°	
9.5	35 15.0	10.0	
9.4	32.1	24.3	
9.2	51.3	16.5	
9.5	36 14.6	26.6	
8.0	32.5	21.5	K
9.5	34.4	28.0	
9.5	57.7	32.8	
9.5	58.1	57.2	
9.4	37 34.2	52.6	
9.5	57.5	52.4	
8.3	38 20.8	15.7	K
9.5	22.0	27.1	
9.4	31.4	51.3	
9.5	51.4	53.0	B
9.5	55.0	39.6	
9.0	39 26.8	21.3	
8.7	27.7	54.8	Kb
9.2	27.8	15.0	R
9.5	45.1	22.8	
9.5	59.2	57.0	
9.3	40 12.1	31.9	
9.3	22.9	38.9	
9.3	42.8	33.1	
9.5	41 1.1	19.5	
9.5	5.0	54.7	
9.3	14.2	5.4	b
9.5	34.3	56.0	
9.5	44.0	33.6	
9.2	51.6	42.8	
8.3	42 18.1	49.5	K
9.5	32.6	7.9	
9.5	59.7	6.4	
9.5	43 14.8	22.8	
9.5	15.5	8.5	
9.5	19.6	52.2	
9.4	48.1	9.3	R
5.0	44 19.9	0.2	K
8.0	29.9	22.6	K
9.5	48.6	37.8	
8.9	45 44.6	44.2	
9.5	46 25.4	51.4	
7.7	47.2	21.3	K
9.4	57.5	36.1	
9.0	58.5	36.2	
9.1	47 5.7	58.5	Kb
9.5	8.8	54.2	
6.5	36.6	48.6	K
9.5	49 14.3	1.6	B
9.5	39.3	50.8	
9.5	56.6	9.8	
9.5	50 9.7	35.0	
9.5	29.8	42.6	
9.5	37.9	51.4	
9.5	40.9	59.0	
8.2	45.4	19.9	K
6.5	47.4	19.9	K
9.3	51.2	20.2	
9.2	51 10.7	46.1	
9.1	11.7	41.8	b
9.4	20.7	48.0	B
10pr.	+ 33.98	+ 1.11	

526a var | 3 1 | 14.8

661a 9.5 | 3 4.7 | 41.1

m	4ᵘ–5ᵘ	+14°		
	801—860			
9.5	51 26.8	41.7		
9.5	52.5	40.9		
9.2	52 7.6	51.8		*a*
6.7	20.7	10.5		L
9.5	38.4	26.5		
9.4	43.6	10.8		
9.3	44.4	36.6		
8.8	44.4	15.8		L*b*
9.0	44.4	59.2		K
9.1	57.0	30.5		
8.7	53 5.9	0.5		L
8.5	8.0	58.8		K
8.8	11.5	52.5		
9.5	35.2	54.5		
8.4	55.6	31.3		K
9.3	54 41.9	56.8		
9.0	47.9	33.0		
9.5	55 4.6	45.2		
9.4	11.3	21.2		
9.5	43.3	20.2		
9.5	51.9	33.6		
9.4	59.1	47.6		
9.3	56 5.3	36.9		
9.5	14.5	58.2		
7.2	27.9	39.6		K
9.3	34.2	20.2		*R*
9.4	54.7	54.2		
9.2	57 10.9	56.3		K*b*
9.5	51.8	24.2		
9.5	58 16.0	47.9		
7.6	26.0	15.5		K
8.3	42.1	18.4		K
8.9	59 26.7	1.2		K
8.4	30.8	9.9		B
9.2	43.0	3.0		*a*
8.0	52.6	20.6		K
9.4	0 22.1	29.8		
9.5	23.1	37.1		
8.4	25.9	54.6		K
8.2	1 16.5	9.6		K*b*
9.5	39.9	27.5		B
9.0	2 34.1	9.9		K
7.9	44.0	44.0		K
9.5	3 1.9	6.3		
9.5	7.2	30.9		B
9.3	22.0	20.5		
9.3	27.0	30.0		
9.5	34.5	2.0		
9.3	39.1	56.4		
8.5	43.5	10.2		K
9.5	52.5	6.6		
9.5	4 7.9	12.4		
9.5	47.9	45.7		
9.1	6 10.2	18.4		*b*
9.5	13.9	44.8		
9.4	30.6	37.0		
7.6	52.9	53.4		K
9.3	7 23.1	8.0		B
9.3	35.6	12.7		
9.4	42.7	8.8		
10 pr.	+ *34.05*	+ *0.89*		

m	5ᵘ	+14°		
	861—920			
9.5	8 20.0	9.4		
9.1	33.5	29.3		K
9.4	49.0	5.8		
9.5	9 7.9	13.5		B
9.5	12.0	30.5		
8.4	16.3	21.4		K
9.5	21.7	3.5		
9.4	28.0	33.1		
9.5	37.8	30.8		
9.3	59.4	0.9		
9.5	10 18.8	55.7		
9.5	29.4	56.9		
8.3	52.9	20.3		
9.4	11 1.9	4.1		
9.5	11.0	41.7		
9.2	24.2	17.8		
9.5	30.5	41.8		
9.5	50.4	7.5		
9.5	52.8	16.2		*a*
9.0	59.3	2.9		
7.9	12 19.4	54.4		K*b*
9.3	22.4	15.8		*a*
9.5	23.7	40.3		
9.5	50.9	26.6		
9.5	54.0	54.0		
8.8	13 2.4	20.2		
9.4	2.6	3.5		
9.0	4.0	46.8		
9.0	52.9	52.9		B
7.7	14 43.3	12.5		K
9.4	55.5	29.7		
9.2	15 7.8	1.0		
9.2	24.6	59.1		
9.4	32.5	5.8		
9.5	32.8	47.3		
9.5	34.9	37.0		
9.3	16 3.4	39.4		*a*
9.0	6.3	14.8		
9.3	20.9	10.3		
9.3	38.8	3.1		
9.1	40.2	46.9		
9.0	44.1	39.7		
9.3	49.8	3.1		
9.1	17 17.0	22.0		
9.4	17.3	16.5		
9.2	30.6	49.4		
9.3	53.2	58.9		
9.2	18 7.0	15.9		
9.5	10.1	47.7		
9.4	17.8	9.0		
9.4	31.4	32.7		
9.4	41.5	19.0		
9.3	45.0	4.5		
8.5	19 24.0	0.3		
8.8	29.8	56.0		K*b*
9.4	34.0	30.3		
8.6	36.1	53.0		K
9.5	39.5	4.2		
9.4	40.1	9.0		
8.9	42.2	56.3		K*b*
10 pr.	+ *34.10*	+ *0.65*		

m	5ᵘ	+14°		
	921—980			
9.5	20 3.4	47.2		
9.4	47.8	37.3		
9.2	21 8.2	40.9		
9.5	21.8	25.4		
9.2	33.1	50.7		
9.3	51.0	2.1		
9.5	22 2.2	47.4		
9.1	16.1	28.6		*b*
9.5	25.7	10.3		
9.4	34.6	45.4		
9.4	59.5	48.0		
9.1	23 9.2	40.6		
8.3	15.0	31.4		L
7.0	19.6	48.9		K
8.9	42.1	8.2		
9.2	49.1	47.4		
9.4	58.6	14.5		
9.3	24 5.3	46.1		
8.9	30.9	6.4		K
9.3	32.0	46.6		
9.5	57.2	22.5		
9.4	25 4.6	54.3		*a*
9.5	12.5	29.3		
9.4	13.4	56.7		
9.5	33.0	18.5		
9.3	33.1	33.7		
5.7	40.6	12.0		K
8.3	46.3	22.8		K
9.4	52.3	17.6		
8.8	56.1	54.2		K
9.1	59.4	4.3		
9.4	26 28.0	4.4		
9.5	54.6	27.8		
9.4	57.4	55.3		
9.5	59.0	4.7		
8.5	27 18.7	19.4		
9.1	52.2	1.9		
8.4	28 12.4	33.3		K
8.5	27.4	7.4		K
9.5	39.9	33.5		
9.5	29 39.7	18.1		
9.5	40.3	53.1		
9.5	42.4	58.4		
9.1	51.3	37.3		
8 8	51.3	17.6		
9.5	30 7.2	56.2		
9.4	21.5	8.6		
9.5	25.5	47.5		
9.5	33.4	52.5		
9.1	39.6	45.3		K
9.5	41.9	22.6		
9.3	46.9	13.3		
7.6	52.2	28.4		K
9.5	31 4.6	18.6		
9.5	8.9	32.6		
9.5	21.7	46.5		
9.5	28.8	32.1		
8.5	31.7	42.2		K
9.4	57.7	35.9		
9.5	58.2	55.2		
10 pr.	+ *34.13*	+ *0.50*		

m	5	+14°		
	981—1040			
8.8	32 15.9	44.0		K
9.2	33 1.0	28.5		
9.3	9.1	23.0		
9.3	10.8	16.6		
9.0	37.8	44.3		
9.0	40.5	52.1		
9.4	34 1.5	8.4		
8.5	23.3	56.8		
9.5	41.8	31.3		
9.5	43.7	10.9		
7.2	45.0	5.9		K
9.5	55.1	27.6		
9.3	59.7	50.6		
9.5	35 3.6	23.9		
9.4	6.0	38.7		
9.4	7.0	48.4		
9.3	8.4	57.9		
8.8	16.5	20.3		K
8.9	18.2	13.3		K
9.1	19.6	24.0		
9.1	26.1	44.2		
9.5	30.2	7.2		
9.0	36.7	36.1		
9.5	41.5	37.0		
9.5	48.6	31.9		
9.5	57.8	33.0		
9.4	36 5.3	48.0		
7.8	14.7	59.8		K*b*
9.5	16.0	36.7		
8.5	28.3	30.4		K
9.4	28.6	20.7		
8.8	37.4	31.1		K
9.5	40.7	49.3		
9.5	42.6	44.0		
9.5	59.0	5.5		
9.4	37 12.3	30.3		
9.2	15.8	11.8		
8.9	23.1	37.8		
9.3	30.0	40.0		
9.4	32.8	51.6		
9.5	38 1.6	52.4		
9.5	10.8	56.4		
9.4	19.4	6.1		
9.4	43.2	4.9		
6.0	57 3	26.2		K
9.4	39 15.4	27.3		
8.2	21.5	57.7		K
9.5	40 41.7	12.5		
9.5	48.3	56.9		
9.5	50.1	45.6		
9.5	51.3	29.6		
9.5	51.5	5.4		
9.0	51.6	49.7		
8.6	52.1	2.1		K
9.5	41 4.7	43.1		
8.7	13.6	21.9		
8.6	40.6	49.7		L
9.4	42.0	56.3		
9.5	51.9	5.7		
9.0	42 10.3	19.1		
10 pr.	+ *34.15*	+ *0.34*		

m	5ᵘ	+14°		
	1041—1100			
5.7	42 13.8	15.3		L
9.5	18.1	51.2		
9.5	21.7	59.5		
9.5	23.2	8.8		
9.4	24.6	2.9		
9.5	26.0	55.7		
7.5	33.6	24.2		K
6.8	37.4	0.1		K
9.2	38.1	40.0		
8.9	43.4	0.2		K
8.9	46.9	36.8		
9.5	48.9	6.0		
9.5	53.9	50.0		
9.0	43 39.3	46.1		
9.1	40.4	3.6		K
9.1	40.4	42.2		
9.2	43.3	15.1		
8.7	48.8	21.6		K
9.1	44 5.1	25.7		
6.0	7.5	7.1		K*b*
9.3	22.3	40.1		
9.5	25.0	3.0		
9.3	50.4	32.7		
9.0	53.8	50.0		L
9.3	58.6	21.2		*a*
9.0	45 5.6	59.1		K
8.9	20.6	23.7		
9.2	53.7	49.5		
9.4	54.5	9.7		
9.3	46 5.3	56.4		
9.4	13.1	34.7		
9.5	20.3	41.0		
9.1	24.0	42.5		
7.3	41.9	10.9		K
9.5	48.5	41.4		
9.5	50.8	4.7		
9.4	47 5.9	39.9		
9.4	7.0	56.0		
8.3	25.9	9.0		
9.5	27.5	44.7		
9.0	48 8.7	31.2		
9.5	12.0	29.8		
9.4	16.1	6.3		
9.5	24.8	50.6		
9.3	33.2	35.1		
9.4	40.2	22.3		
9.5	49 11.8	25.4		
7.5	16.2	2.3		K
8.5	21.3	54.4		K
9.0	25.3	54.0		K
8.1	33.3	40.3		*B*
9.3	33.5	47.3		
8.9	35.0	56.4		K*b*
9.5	41.8	25.7		
9.4	46.4	20.8		
9.3	50 5.0	56.2		
9.5	24.0	25.0		
9.4	30.0	39.1		
9.5	36.0	39.5		
9.1	38.6	59.4		K*b*
10 pr.	+ *34.17*	+ *0.20*		

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5ᵐ—6ᵐ		+14°			6ᵐ		+14°			6ᵐ		+14°			6ᵐ		+14°			6ᵐ		+14°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
9.3	50	41.0	22.7		9.4	0	4.7	1.2	*a*	9.5	7	24.8	22.0		9.0	16	53.8	54.6		9.1	25	24.8	2.7	
9.0		43 3	20.6	*Rb*	9.5		7.5	53.3		9.4		44.5	19.8		9.5	17	5.5	49.2	*a*	8.7		36.1	45.2	K
9.5	51	1.2	46.5		9.2		13.6	39.8		8.7		51.5	8.0	K	6.5		11.6	48.6	K	8.4		37.6	23.9	L
9.5		4.9	3.6		9.5		35.3	7.8		9.5		58.7	0.6		9.5		19.1	30.0		7.4	26	4.9	51.5	K
9.5		53.0	19.1		9.5		43.4	27.6		9.5	8	13.1	55.0		8.7		19.3	5.7	*Kb*	9.5		37.6	37.8	
9.4		58.5	7.7		9.2		44.2	10.5		9.5		14.2	2.0		7.7		28.4	9.8	K	9.2		43.7	34.1	
9.2	52	17.2	9.6		9.4		53.5	52.5		9.5		18.6	38.1		9.0		31.9	45.3	K	9.5		50.8	55.1	
9.1		18.5	1.0	*b*	9.0	1	31.9	8.0		8.7		40.6	12.8		9.5		42.8	51.0		9.4	27	24.7	18.4	
8.4		23.5	56.2	L	9.5		36.8	27.1		9.5		40.8	2.0		8.5		49.7	16.3	K	9.1		31.4	5.4	*b*
9.2		33.9	49.5		8.0		37.2	52.1	*Lb*	9.5	9	9.8	56 5		9.4		57.8	20.3		9.4		42.2	18.3	
9.3		43.7	43.7		9.0		47.1	5.3		9.5		14.1	13.6		9.1		58.9	35.4		9.4		49.0	58.7	
9.0		47.1	40.7		9.2		49.9	16.4		9.0		14.7	35.5		9.2	18	15.1	31.3		9.5	28	18.9	16.0	
9.3		50.9	12.9		9.4		56.0	46.7		7.0		19.3	6.2	L	9.5		26.0	27 7		9.2		20.0	6.7	
9.0		51.3	45.3		9.4	2	4.1	39.2		9.5		36.2	47.0		9.1		36.2	9.2		9.3		33.1	8.9	
8.8	53	56.5	53.8		9.5		10.0	32.3		6.0		50.3	25.8	K	9.1		43.6	51.6	K	9.4		36.3	9.7	
9.3	54	4.0	42.6		9.5		26.5	49.7		9.5		55.5	56.3		7.0		58.5	58.1	K	8.9		38.1	0.0	K
9.5		14.1	0.7		9.2		26.5	10.2		8.7	10	9.0	24.1	K	9.3	19	4.2	8.5		9.3		42.7	16.4	
9.5		16.7	4.5		9.1		39.5	28.1	*a*	9.5		23.3	22.6		9.5		4.5	42 9		9.2		43.0	17.0	
9.5		29.4	48.4		9.5		59.9	44.5		9.0		30.3	5.5		9.4		19.1	29.8		8.4		48.3	0.8	K
9.4		29.6	34.7		8.4	3	6.7	29.7		9.4		42.8	21.5		9.1		28.2	35.8	*b*	9.4		50.0	18.0	
9.3		33.7	40.2		9.5		10.0	31.8		8.0		49.2	8.5	K	9.5		30.7	2.4		9.4	29	1.4	13.5	
9.4		40.0	0.7		9.2		16.1	15.5		9.0		51.0	41.8		8.5		49.0	10.8	K	9.3		14.8	20.9	
9.5		40.5	30.4		9.1		19.9	22.1		9.4	11	19.2	28.9		9.3		51.3	55.1	K	9.5		16.2	16.8	
8.4		51.6	21.3		9.5		20.3	39.6		9.5		33.8	32.1		9.5		54.6	14.4	*a*	9.5		17.6	24.6	
9.2	55	1.1	49.5	B	9.2		30.1	5.7		9.5		35.1	47.1		8.8	20	23.8	14.4	K	8.9		22.0	48.0	
9.5		14.8	41.4		9.5		40.2	36.4		9.1		46.4	17.5		9.3		24.6	56.9	*Kb*	9.5		25.1	16.1	
9.2		25.2	22.9		4.8		42.3	14.4	*Lb*	5.8		47.7	42.4	L	9.2		31.0	1.6		9.5		31.4	10.9	B
8.5		26.5	21.3	K	9.5		44.3	56.6		9.0		54.6	51.8		9.5		38.3	21.7		9.4		35.4	53.0	
8.3		36.3	57.5	*Kb*	9.4		59.7	3.4		8.5	12	0.1	45.3	K	9.5		38.5	35.5		9.5		36.8	8.0	
9.3		45.1	29.0		9.5		59.7	40.6		9.5		10.6	10.8		9.5		41.3	23.1		9.5		45.0	48.8	
9.0		51.6	36.0		9.3	4	3.4	50.1		9.1		23.9	31.7	R	9.5		46.7	27.5		9.3		46.1	24.9	
9.3		55.9	39.7		9.3		29.4	28.9		9.3		31.0	59.0		9.5		48.2	3.1		9.5		49.1	24.4	
8.1		56.6	4.5	L	9.3		40.3	21.4	*a*	9.1		33.2	6.5	*b*	9.5	21	20.2	43.1		9.5		58.1	51.0	
9.5	56	8.2	53.6		9.3		42.1	58.4	K	7.7		43.9	46.3	K	9.3		46.9	44.6		9.2	30	1.8	50.9	
9.5		13.2	46.0		8.4		46.0	20.9		9.5	13	13.2	42.4		8.2		49.3	35.0	K	9.0		4.3	53.1	
7.5		42.1	24.0	K	9.5		53.9	52.4		9.5		27.3	22.7		9.5		52.1	53.6		9.5		13.2	29.7	
8.9		59.3	42.0		9.5		54.5	49.0		9.5		39 0	30.2		9.0		55.2	48.7		8.5		23.5	43.9	B
9.2	57	5.1	38.8		9.5	5	9.9	8.5		8.7		43.5	22.3	K	9.5	22	0.6	18.4		9.5		42.7	34.6	
8.1		11.4	34.4	L	9.3		10.2	22.5		8.5		57.2	45.2		8.3		4.8	59.3	*Kb*	8.9		48.0	21.5	
9.2		31.9	26.9	B	9.5		17.6	35.7		8.4	14	2.4	55.7	*Kb*	9.5		5.0	54.6		9.4	31	26.4	26.8	
9 2		37.0	26.8	B	9.5		18.4	40.4		9.5		16.2	35.5		9.4		24.4	38.5	B	8.5		32.5	28.8	K
9.5		49.7	21.7		8.5		18.4	3.1	K	9.1		37.3	34.5		9.5		34.7	54.0		9.0		39.6	44.1	K
9.5		56.6	30.7		9.3		20.2	53.2	K	9.5		46.5	3.9		9.5		54.4	17.4		9.5		40.9	42.9	
9.5	58	2.1	26.1		9.5		25.8	53.7	B	9.5		52.0	18.4		9.4	23	20.1	56.6	*a*	9.5		58.9	47.3	
9.5		3.1	21.5		9.5		26.5	0.4		9.5		56.5	35.0		9.3		28.9	39.8		9.5	32	15.2	14.2	
9.5		10.3	54.0	B	9.0		32.7	9.2	K	9.4	15	3.5	22.2		9.5		32.7	19.3		9.5		25.0	9.5	
8.0		35.5	13.6	K	9.5		33.4	47.6	B	9.0		9.0	36.2		9.5		35.0	38.5		9.5		42.3	0.0	
9.2		37.0	27.7		9.5		35.3	40.7		9.5		11.6	37.5		9.5		39.8	4.8		9.2		42.9	4.0	
8.5		46.9	36.0	K	9.4		54.9	48.9		9.5		15.1	16.2		9.5		42.5	0.8		9.5		48.0	41.8	
8.0		53.8	27.6	K	8.6		59.4	28.5	K	8.1		19.3	6.4	K	9.5		56.2	31.9		9.5		48.6	29.0	
9.4	59	11.5	49.2	R	8.0	6	2.5	31.5	K	9.3		19.2	14.9		9.0	24	2.1	57.5		9.1		57.3	59.3	
4.6		17.9	46.9	K	9.5		25.0	46.0		9.4		29.5	17.9		9.1		3.5	6.3	K	9.5		59.8	53.6	
9.5		18.4	22.6	B	7.7		26.5	37.8	K	9.4		30.7	56.3		9.4		48.3	22.1		9.5	33	1.2	59.8	B
9.5		29.5	34.9		9.2		29.6	39.7		9.3		31.2	48.5		9.5		49.1	44.2		7.5		33.0	32.6	K
9.4		32.7	35.6		9.2		31.1	58.2	*Kb*	9.4		33.0	51.0		9.5		50.0	35.4		6.7		36.2	21.0	K
9.5		33.3	55.4		8.9		40.4	43.8		7.6		39.6	11.0	K	9.4	25	4.0	16.1		9.1		55.5	59.4	*b*
8.2		40.2	21.4	K	9.5		50.2	46.9		9.5	16	9.7	47.3		9.1		8.8	28.6		9.2	34	7.9	4.2	
9.3		55.4	12.0		9.4		52.3	7.1		9.4		11.0	7.2		8.2		16.1	41.5	K	9.5		11.7	20.5	
9.4		59.1	7.9		9.1	7	18.4	20.5		9.5		33.8	42.6		6.0		22.5	15.4	L	9.0		13.9	40.9	
8.9	0	4.4	0.8	S	8 9		19.0	10.9	K	9.0		41.3	28.8	K	9.0		23.6	21.4		8.7		15.1	29.9	K
		+	+				+	—				+	—				+	—				+	—	
10pr.		34.18	0.06		10pr.		34.18	0.06		10pr.		34.17	0.18		10pr.		34.16	0.30		10pr.		34.14	0.44	

m	1401—1460 6ʰ	+14°		m	1461—1520 6ʰ	+14°		m	1521—1580 6ʰ—7ʰ	+14°		m	1581—1640 7ʰ	+14°		m	1641—1700 7ʰ	+14°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′ ″	′	
9.4	34 51.7	7.7	B	9.5	43 10.3	8.2		9.5	51 33.5	55.0		9.2	1 53.2	4.1		9.3	12 7.3	31.3	
9.2	56.0	3.5		9.5	23 8	11.6		9.5	34.2	4.1		9.5	2 1.5	7.5		8.5	53.2	17.9	K
9.5	35 14.8	28.4		9.5	35.0	23.9		9.3	54.6	3.7		9.3	27.0	4.3		9.3	13 38.7	7.6	
9.5	30.2	4.1		9.5	45.5	16.2		9.5	52 9.3	27.7	B	9.2	35.1	17.1	b	8.8	48.6	53.6	
9.5	47.4	56 6		9.4	56.3	26.0		9.3	21.0	48.6		9.4	52.0	33.2		9.2	53.3	59.0	
9.5	58.5	1.7		9.4	44 8.8	5.1		9.2	25.8	34.6		9.3	53.7	0.8		8.3	14 3.7	14.5	K
9.1	36 5.2	18.6	b	9.5	12.0	52.5		9.3	34.8	0.6		9.4	3 4.6	37.0		9.3	5.5	19.6	
9.4	13.0	24.3		9.4	14.0	36.6		9.2	40.6	22.7		9.2	22.0	15.5		8.4	24.6	12.3	K
9.5	13.1	44.4		9.5	15.0	48.9		9.1	43.6	17.2	b	8.6	34.1	48.4	K	8.5	33.0	32.6	
9.5	28.1	32.6		9.5	33.6	37.9	b	9.3	54.0	35.8		9.5	42.6	2.5		8.7	15 10.3	11.6	K
9.5	36.9	22.8		9.5	34.8	32.7		9.5	53 7.8	22.7		9.5	47.0	15.4		9.5	37.7	16.1	
9 0	40.9	59.5		9.4	40.1	52.6		9.5	18.3	32.3		9.3	47.9	50.6		9.5	39.3	24.9	
9.5	45.0	18.5		9.3	41.5	56.4	a	9.4	50.9	55.8		9.0	52.6	54.2	K	8.8	49.4	5.5	
9.5	46.9	22.0		9.2	48.3	19.7	a	8.6	58.0	2.4		9.0	4 4.7	56.8		9.2	58.5	45.4	
9.4	48.4	17.7		9.4	50.9	56.2	a	8.5	54 6.5	52.1		9.5	6.2	34.7		9.4	16 2.7	33.9	
9.5	37 4.6	18.3		9.5	45 28.0	0.0	R	9.4	17.9	44.3		9.1	6.8	55.5	a	9.2	6.6	12.8	
9.5	12.5	17.2		8.0	35.7	55.7	K	9.5	29.0	15.9		9.5	27.7	11.6		9.3	34.5	55.9	K
9.5	14.0	18.6		9.5	45.7	42.0		9.5	36.8	58.6		9.1	34.6	50.3		9.3	54.6	59.6	Kb
9.5	17.6	53.4		9.2	56.3	19.2	K	7.5	55 1.2	32.6	L	9.3	51.1	47.8		9.3	17 0.7	5.8	
9.5	26.7	4.0		9.4	46 8.8	21.0		9.3	2.7	4.3		6.5	5 13.1	0.2	K	9.5	4.8	25.3	
9.3	29.4	37.8		8.1	12.5	48.2	K	9.2	14.0	52.0	K	9.5	21.0	6.0		9.2	13.8	23.3	K
9.3	30.3	38.5		9.5	19.1	2.7		9.5	17.2	24.8		9.5	24.5	29.8		9.3	13.8	52.9	K
9.5	45.6	30.4		9.4	37.6	24.9		9.5	17.2	38.8		7.8	47.0	12.8	K	9.5	35.3	49.9	a
8.5	49.5	11.5	K	9.5	38.7	54.9		9.3	30.4	18.9		9.5	6 3.9	4.2	a	8.8	44.3	22.7	K
9.1	51.9	43.8		9.5	49.2	22.5		8.5	41.3	53.2	K	9.0	20.0	5.5		8.0	50.9	23.0	K
9.3	53.7	28.5		8.6	56.4	24.6	K	9.0	42.6	17.9		9.0	24.0	48.0	K	9.5	18 8.6	58.0	
8.7	38 3.1	58.7	K	9.5	47 10.6	39.7		9.4	46.9	2.1		9.5	41.4	53.6		9.5	17.2	48.0	
9.2	4.0	6.3		9.5	14.4	33.7		9.5	47.1	4.7		8.5	44.6	14.7	K	9.4	55.1	40.5	
9.5	33.0	14.1		9.2	21.9	50.6		8.5	50.6	13.0		9.5	51.1	49.9		9.3	19 13.2	21.7	
9.3	34.6	57.8	a	9.4	33.7	14.2		9.5	56 18.0	13.7		9.5	56.2	26.8		9.3	21.5	15.5	
9.2	38.9	59.2	K	8.9	37.8	3.7	K	9.5	27.5	37.2		9.5	7 5.8	45.8		7.8	28.1	57.7	B
9.4	48.3	0.6		9.5	47.5	3.6		9.5	29.4	35.7		9.5	12.5	28.5		9.4	20 15.8	48.6	
9.1	39 11.5	33.3		9.2	51.2	6.7	K	9.5	38.3	37.9		9.4	28.4	35.7		9.5	27.6	1.2	
9.4	18.6	14.7		8.4	55.3	40.9	L	9.0	44.4	33.9	K	9.5	28.8	37.7		9.5	27.9	53.1	
9.5	21.4	50.0		9.5	48 19.6	4.6		8.8	48.7	26.3	Kb	8.4	30.2	6.3	Kb	9.5	53.7	50.0	B
8.5	29.8	56.7	K	8.7	26.7	12.8	K	9.4	51.0	58.2	a	9.4	55.9	53.1		8.9	21 0.5	39.9	B
9.3	37.5	39.7	a	9.4	44.6	26.5	a	9.3	58.5	26.6		9.1	8 4.1	38.4	K	7.5	2.0	38.8	
9.5	37.5	13.9		9.5	48.5	4.2		6.9	57 19.2	40.6	K	9.2	52.8	23.8		9.5	23.0	53.4	
9.1	38.8	0.7	B	9.1	50.3	54.5	K	9.5	25.3	9.3		7.7	9 0.0	6.2	K	9.3	30.3	57.1	
9.2	43.7	40.3	K	9.4	49 1.7	18.6		7.7	52.9	12.2	K	9.5	3.6	27.5		9.5	34 2	29.1	
8.9	45.9	25.4	K	9.5	13.4	24.4		9.5	58 2.4	42.6		9.4	12.0	53.8		7.8	22 19.0	10.2	K
9.2	49.5	55.1	Kb	9.5	14.2	50.9	a	9.5	28.5	48.2		8.7	41.4	2.3	K	9.5	22.8	0.5	
9.4	56.3	41.0	a	9.3	16.0	51.2	K	9.3	41.3	10.7	a	9.5	47.5	4.0		8.5	24.5	7.8	L
9.5	59.4	13.9		9.4	21.0	46.6		9.5	46.0	50.7		9.2	10 12.1	21.2		9.3	53.0	55.0	b
7.9	40 1.2	45.0	K	9.1	21.2	1.1		9.5	46.4	35.1	a	9.3	20.8	42.9		9.5	23 16.2	12.7	
9.5	3.1	34.8		9.3	39.7	40.8		8.8	59 15.8	10.8		9.5	22.0	52.9		9.5	30.3	39.6	
9.5	3.9	26.2		9.3	40.7	41.0		8.7	20.5	12.3		9.5	22.0	47.0		9.5	33.8	31.5	
9.4	5.5	32.5		9.3	48.3	35.0		8.2	22.0	33.5	B	8.0	27.4	37.3	B	9.5	38.7	10.5	
9.0	30.7	33.7		7.9	53.9	24.9	K	9.5	25.7	16.1		9.5	39.0	11.5		9.3	40.1	18.6	K
9.3	32.4	38.0		9.5	54.2	7.8		9.0	38.1	35.2		9.4	41.0	14.8		9.5	24 1.7	23.9	
9.4	51.2	20.9		9.3	56 3	52.5	Kb	9.4	44.3	55.5		9.5	43.1	58.0		9.0	6.7	25.2	K
8.7	54.0	48.9	K	8.4	58.6	24.3	K	9.5	58.7	39.5		9.5	44.2	30.5		9.5	21.1	31.2	
8.9	54.8	26.8	K	7.6	59.9	26.6	K	9.5	0 6.8	27.5		9.3	46.0	6.9		9.5	23.9	37.5	
8.9	55.7	30.3	K	9.5	50 2.2	4.1		9.5	26.4	8.2		9.5	49.9	20.7		9.5	44.8	18.5	
9.2	41 29.6	45.7	K	9.4	16.5	50.4		9.5	43.5	53.2		9.5	56.6	5.1		9.4	25 23.7	12.4	
8.6	42.0	51.3	K	9.5	24.9	59.9		9.2	44.4	46.8	b	8.9	11 26.3	11.9		9.5	28.2	40.6	
9.4	51.9	35.2		9.4	33.8	38.4		9.3	1 5.3	22.9	K	9.5	57.6	2.6		9.5	33.5	45.0	
9.5	42 6.4	34.4		9.3	56.2	18.1		9.5	8.4	13.0		9.4	12 1.5	42.5		9.1	52.2	4.1	b
9.4	30.9	42.3		8.6	51 14.2	30.7	K	9.5	12.5	52.7		9.4	2.7	22.5		8.0	26 13.8	24.6	K
8.4	43.4	1.7	K	9.3	26.9	9.8		9.5	39.6	15.2		9.0	5.7	29.0	K	9.5	18.2	52.5	
	+	—			+	—			+	—			+	—			+	—	
10 pr.	34.12	0.56		10 pr.	34.10	0.69		10 pr.	34.07	0.82		10 pr.	34.03	0.97		10 pr.	33.97	1.13	

1597 a
9.5 | 4 28.7 | 55.0

7ᵘ–8ᵘ +14°

1701—1760

m	7ᵘ ′ ″	+14°	
9.5	26 32.8	46.6	
9.5	35.7	54.6	
9.5	41.3	43.9	
9.5	58.4	2.5	
9.5	27 2.8	34.0	
9.5	54.5	21.5	
9.5	28 29.3	49.2	
9.5	53.8	43.7	
9.5	29 10.2	53.4	*a*
9.5	17.4	59.8	
8.7	18.5	18.0	K
6.5	41.7	39.8	K
6.5	43.7	22.7	K
9.2	57.7	36.6	K
9.5	30 22.8	16.9	
9.5	47.4	2.4	
9.4	48.8	54.0	K
9.5	50.0	59.4	
9.0	31 9.1	47.9	K
9.0	43.6	51.9	K
6.5	32 38.8	5.1	K
9.2	49.6	51.5	K*b*
9.3	56.6	1.9	
8.8	33 4.7	44.0	K
9.5	5.6	52.7	*a*
9.5	27.9	42.5	
9.5	28.0	56.8	
9.5	31.0	41.8	
6.0	54.4	32.5	K
9.0	34 30.8	23.4	K
9.4	33.5	56.8	
9.5	35 3.3	53.9	
9.5	7.4	3.5	
9.3	9.2	9.0	
9.3	11.3	47.9	
8.9	32.8	0.4	
9.5	36.3	22.7	
7.9	58.9	30.8	*B*
8.6	36 5.2	20.7	K
9.5	23.8	40.5	
9.5	24.4	58.6	
9.5	35.7	48.9	
9.4	36.5	40.5	
9.0	37 11.5	56.3	K*b*
9.0	16.3	9.5	L
9.5	33.7	46.8	
9.0	35.3	38.5	K
8.4	38 8.8	4.5	K
9.5	23.0	52.5	
9.2	27.7	44.6	
9.4	33.1	54.5	
8.5	41.3	24.5	K
8.4	48.3	14.1	K
9.5	39 1.2	25.0	
9.2	10.6	49.6	
8.7	26.7	30.4	L
9.2	48.2	32.8	
9.5	49.8	44.0	
9.5	40 26.3	56.6	
9.3	44.2	26.2	
	+	—	
10pr.	33.88	1.34	

1761—1820

m	7ᵘ ′ ″	+14°	
9.4	41 3.4	2.0	
7.5	28.7	29.7	K
7.5	32.7	12.3	K
9.2	42 11.2	1.5	
9.5	31.4	57.8	
9.2	35.4	3.9	K
8.9	43 2.9	6.6	K
9.5	13.7	37.8	
8.2	15.8	31.4	K
9.3	44 19.4	1.3	
9.4	31.8	48.2	
9.5	55.7	48.2	B
8.8	45 9.5	53.1	K*b*
9.5	28.4	7.6	
9.4	29.0	48.4	
9.5	31.0	55.7	
9.4	32.6	49.1	
8.8	50.5	8.3	
9.5	52.2	53.3	
9.5	59.7	12.7	
9.5	46 0.9	59.5	
9.2	3.0	14.4	
9.0	8.1	36.7	
9.5	15.3	10.9	
9.5	47 40.8	4.5	*a*
9.0	52.8	43.3	
8.8	58.8	2.0	L
9.5	59.9	57.0	
9.5	48 29.6	20.7	
9.0	35.3	43.7	
9.5	49 6.3	24.8	
9.5	7.6	10.0	
9.5	8.8	37.8	
9.3	13.9	15.5	
9.5	46.2	2.0	
9.5	51 17.8	33.2	
8.2	18.8	12.2	K
9.5	20.5	58.1	
9.5	36.9	40.0	
9.5	39.5	34.2	
8.0	39.8	4.6	K
9.5	52 8.2	12.3	
9.3	17.2	44.0	*b*
9.5	23.1	22.1	
9.3	45.7	45.1	
9.5	53 13.0	44.9	
9.5	20.4	26.4	
8.9	27.7	26.2	K
9.4	46.6	28.7	
9.5	54 4.8	49.0	
7.9	55 17.7	4.6	K
8.6	24.6	48.5	B
7.7	25.7	29.6	B
9.2	41.4	42.5	B
9.1	47.5	58.0	K*b*
9.5	56 0.8	23.6	
7.7	1.2	5.1	K
9.3	11.3	56.4	K
8.3	23.8	10.6	K
9.3	57 42.2	46.2	
	+	—	
10pr.	33.79	1.52	

1821—1880

m	7ᵘ—8ᵘ ′ ″	+14°	
9.2	57 47.1	50.6	
8.8	56.8	39.9	
9.5	58 5.3	28.0	
9.0	45.7	28.4	
8.9	58.7	45.6	K
9.4	59 1.5	53.1	
9.1	28.3	47.8	
9.1	35.8	47.4	K
8.3	55.8	46.6	K
9.4	0 21.9	10.8	B
6.5	36.8	4.1	K*b*
8.5	52.8	28.5	
9.0	55.7	6.3	B
8.8	58.6	5.6	K
9.5	1 1.3	15.2	
9.5	24.7	45.8	
9.5	28.8	14.4	
9.0	39.7	38.7	
7.9	58.9	55.8	L
9.5	2 17.8	38.1	
9.3	22.6	56.6	K*b*
9.5	25.3	11.2	
9.0	36.2	28.4	
9.1	3 12.9	19.8	
9.5	21.6	3.8	
9.5	36.9	40.3	
9.3	47.4	34.7	
9.5	55.2	59.2	
9.1	4 11.5	28.4	B
6.8	15.3	26.7	K
9.4	25.4	7.1	B
9.5	39.9	45.5	
9.4	41.5	0.7	
8.6	55.0	20.9	K
9.4	5 1.8	3.3	
9.4	6.9	32.3	
9.3	32.3	18.0	K
9.5	52.6	30.9	
9.5	52.7	27.1	
9.5	7 48.4	42.5	
9.5	48.6	25.6	
9.5	49.7	20.5	
9.4	8 15.5	48.7	B
9.2	22.1	49.8	K
9.5	36.9	56.5	
9.0	49.4	22.7	
9.0	9 16.5	1.6	K
9.4	49.5	54.0	
8.8	53.4	4.8	K
8.9	10 28.6	8.7	K
9.0	34.5	44.4	
8.3	11 7.0	37.8	K
9.0	7.2	59.3	
9.5	58.8	34.3	
9.5	12 9.7	57.7	
9.5	50.1	32.0	
9.0	13 18.1	5.5	
7.9	43.3	47.0	L
7.3	48.9	5.3	L
9.5	14 4.3	27.7	
	+	—	
10pr.	33.68	1.73	

1881—1940

m	8ᵘ ′ ″	+14°	
9.1	14 23.3	12.1	L
9.5	49.3	16.0	
9.2	15 5.4	48.5	K
9.5	35.4	59.1	
9.2	16 10.3	50.3	B
9.4	15.6	35.4	
9.4	29.4	8.3	
9.5	17 16.8	3.2	
9.2	21.5	53.5	*b*
9.0	18 5.4	1.4	
9.4	29.4	8.7	
9.3	19 26.5	10.5	
8.7	29.3	27.7	K
9.4	55.3	42.2	*a*
9.5	58.8	54.7	
9.4	20 12.1	6.6	
9.4	14.3	34.6	
9.4	16.4	0.2	
6.2	32.5	41.9	K*b*
9.5	40.3	12.5	
9.4	21 6.0	11.6	B
9.5	23.9	48.7	B
9.5	45.3	54.3	
9.5	48.3	51.9	
9.5	50.8	16.4	
9.5	22 7.8	22.5	
9.5	21.5	16.3	
9.5	24.8	56.1	*a*
9.4	41.5	34.7	
9.2	42.8	54.7	K
9.3	43.7	51.4	K*b*
9.5	23 18.3	0.2	
9.5	24 14.3	24.0	
8.8	19.8	34.7	
9.5	25 13.8	33.0	
9.5	33.5	58.1	
7.8	34.1	2.4	K
9.5	43.8	35.0	
9.5	26 13.8	33.0	
9.1	15.8	10.2	K
9.2	36.1	20.8	
9.5	27 3.8	15.0	
9.5	4.6	59.7	
8.9	29.8	6.0	B
9.5	33.7	1.2	B
8.5	41.3	37.7	K
8.2	43.8	1.7	L
9.5	28 2.3	45.0	
8.0	8.0	17.1	K
8.9	10.5	16.1	K
9.5	25.5	57.4	
8.9	37.3	29.5	
9.5	29 17.3	32.0	
9.5	32.3	44.7	
7.8	44.5	58.3	K*b*
9.5	49.4	2.3	
8.9	30 12.8	50.6	
9.3	16.3	11.2	
9.5	54.8	50.9	
9.5	31 5.3	17.0	
	+	—	
10pr.	33.53	1.95	

1941—2000

m	8ᵘ ′ ″	+14°	
9.5	31 29.3	23.6	
9.5	42.8	1.1	
9.1	45.1	14.3	*b*
9.4	32 10.3	35.6	
9.0	20.7	54.7	K
8.0	31.8	53.3	K*b*
9.5	33.8	4.1	
9.2	36.8	20.8	
9.5	37.3	11.8	
9.5	49.9	36.9	
9.3	49.9	33.8	
9.5	59.5	25.7	
9.5	33 22.3	1.4	
9.5	32.8	5.5	
9.5	39.3	55.0	
9.0	46.3	15.3	K
9.2	34 9.3	17.0	
9.5	25.1	4.6	
8.8	32.3	29.4	
9.5	51.3	37.7	
9.3	35 11.1	10.3	
7.9	11.3	38.3	L
8.7	50.8	7.4	K
8.5	36 4.3	17.1	K
9.5	16.8	58.5	
9.3	17.5	11.1	B
8.5	22.2	56.4	
9.5	37 3.7	34.3	B
9.4	20.2	58.4	
9.2	58.8	53.5	R
7.8	38 8.8	35.6	K
9.5	58.3	20.4	
9.5	39 0.3	15.3	
8.6	31.2	41.6	K
9.5	41.8	35.3	
9.5	40 26.3	37.4	
9.1	40.3	21.5	*b*
9.5	53.2	9.1	
9.5	41 17.4	34.0	
9.0	43.3	28.2	
9.3	42 27.7	55.6	*b*
9.3	28.3	37.1	
9.5	45.8	22.2	
9.5	43 41.6	8.5	
9.4	44 13.8	56.1	B
9.2	17.8	37.8	
8.9	57.3	31.7	B
7.7	45 40.6	57.2	K
6.8	44.8	23.6	K
8.9	46 18.7	58.0	
9.0	19.1	21.7	
8.2	24.3	46.4	K
9.4	39.3	48.8	
8.8	46.3	6.2	K
9.4	59.8	18.4	
7.8	47 36.8	44.3	K
9.5	48 9.2	56.1	
9.5	35.0	14.0	
9.5	47.9	59.8	
9.0	48.5	55.1	
	+	—	
10pr.	33.39	2.13	

2001 — 2060

m	8ᵐ—9ᵐ	+14°	
9.5	48′ 59.3	55.4	
9.2	49 24.2	42.3	
9.2	33.1	45.9	K
9.5	50 8.3	56.0	
9.5	27.5	13.5	
9.5	31.6	47.0	
8.3	45.6	48.3	K
9.5	51 21.5	32.1	
9.5	25.2	56.5	
9.5	46.9	38.0	
9.4	52 3.1	29.8	B
9.1	12.1	24.5	K
9.2	29.5	44.6	b
9.5	32.0	28.0	
9.5	53 45.4	14.9	
9.5	54 24.5	11.3	
9.5	55 7.8	29.3	
8.0	17.6	44.9	K
9.3	31.0	36.5	B
9.3	31.4	56.7	Kb
9.4	35.6	37.0	B
9.0	56 16.0	52.2	
9.5	49.6	28.4	
8.8	58.6	20.0	K
8.8	57 13.1	50.1	K
9.5	45.9	21.3	B
9.5	58 5.8	9.7	
9.3	36.9	59.7	
9.4	49.1	5.6	
9.1	59 34.9	37.2	K
9.5	48.1	59.4	
9.1	52.4	15.5	
7.7	0 5.8	36.9	L
9.4	24.8	31.0	B
9.5	43.2	36.5	
9.5	1 46.6	4.6	
9.5	2 12.3	54.7	
9.5	20.6	48.4	
9.0	22.1	19.7	K
9.0	24.9	14.3	K
8.9	42.6	51.0	K
9.4	3 16.8	51.7	
9.2	40.3	56.9	K
9.5	4 0.6	6.2	
9.5	14.0	48.9	
9.5	5 14.1	37.9	
9.5	48.2	8.2	
8.8	49.6	47.5	K
9.5	52.7	3.2	
9.4	55.5	51.5	
9.5	6 7.5	15.0	
9.5	13.7	3.2	b
9.5	7 9.0	27.2	
9.2	11.3	46.2	
9.5	8 0.0	58.8	
9.5	2.7	9.0	
8.3	7.6	44.1	K
9.2	25.8	32.7	
9.4	9 32.9	54.8	
9.5	42.1	55.1	
	+	—	
10pr.	33.16	2.36	

2061—2120

m	9ᵐ	+14°	
9.5	9′ 48.6	28.9	
8.8	51.5	15.4	K
9.5	10 11.8	46.2	
9.4	37.2	33.8	
9.5	42.0	59.6	
9.3	48.4	37.1	B
9.5	50.7	3.7	
8.8	51.6	15.7	K
9.5	11 36.8	53.5	
9.0	40.7	8.7	
9.2	40.8	5.7	
9.3	12 1.1	55.0	
9.2	5.3	40.9	R
9.4	15.4	6.3	
9.5	22.0	8.3	B
9.5	45.0	6.7	
9.5	47.0	4.8	
9.5	13 21.7	6.6	
9.3	22.0	59.6	
9.5	51.8	52.8	
9.1	51.9	32.4	b
9.5	14 58.2	28.5	B
9.0	15 5.9	47.9	Kb
9.5	22.0	6.8	
8.9	30.8	28.2	B
9.0	16 1.8	49.2	K
8.7	3.2	0.4	L
9.2	27.9	49.1	K
9.5	45.7	22.4	
9.2	17 1.4	56.1	K
9.5	6.4	3.9	
9.0	23.1	49.1	K
9.5	54.6	5.3	
9.5	18 45.8	0.0	
7.2	59.6	54.7	K
9.5	19 22.6	15.7	
8.2	20 0.4	23.3	L
9.5	21 21.0	5.6	
9.5	28.2	30.1	
9.5	*33.1*	*6.0*	
7.7	22 46.8	7.7	K
9.1	53.7	8.0	aB
8.6	23 3.6	7.3	K
9.5	47.8	2.6	
9.3	24 27.4	33.4	
9.0	32.7	29.5	K
9.5	33.8	22.8	B
9.5	26 1.2	25.8	
9.5	7.6	45.5	
9.5	38.7	56.3	
9.5	48.3	2.7	
9.5	56.7	30.1	
8.3	27 15.4	43.4	K
9.2	16.4	43.7	aB
9.0	34.1	46.8	K
9.4	29 5.0	10.1	B
9.3	5.6	2.5	
9.5	5.9	11.8	
9.5	40.4	10.1	
9.5	49.5	25.6	
	+	—	
10pr.	32.97	2.53	

2121 — 2180

m	9ᵐ	+14°	
9.5	30′ 25.5	39.8	
9.5	31.1	40.4	
8.6	43.6	13.3	
9.5	54.1	30.3	B
9.5	31 59.5	20.3	
9.5	32 24.9	24.6	
8.8	29.5	38.8	K
9.1	43.5	20.3	
9.3	33 3.5	53.1	K
9.1	10.9	46.8	K
8.6	34 18.9	11.6	K
9.5	35 2.5	24.9	
8.8	10.9	47.5	
7.3	43.6	6.3	K
8.6	47.5	23.1	K
6.0	49.6	40.5	K
8.8	52.2	27.8	K
9.2	53.5	32.3	B
8.8	38 11.8	7.2	B
9.5	18.9	54.7	
9.0	33.5	19.6	
9.5	52.3	49.2	
9.0	39 6.0	48.7	K
9.2	11.0	38.7	
9.5	28.5	20.0	
9.2	42.5	58.9	K
8.2	59.0	9.7	K
9.5	40 28.8	59.3	B
9.5	39.5	46.4	
9.5	55.5	55.5	
8.2	41 0.2	27.6	L
9.3	35.2	21.0	
9.4	50.3	24.2	
8.8	42 17.9	16.1	
9.4	26.7	6.3	
9.5	50.6	56.8	
8.2	57.7	47.5	K
9.5	43 30.2	21.0	
9.5	55.3	52.6	
9.4	45 50.5	41.9	
9.5	46 15.5	19.3	b
9.5	36.5	29.4	
9.5	47 0.0	48.5	
9.4	48 25.9	45.3	
9.5	34.9	43.5	
8.8	45.2	31.7	K
9.5	49 40.9	40.4	
9.0	44.5	17.8	K
9.5	48.5	44.3	
8.5	50 2.6	17.1	K
9.1	14.5	36.6	
9.2	20.4	46.0	aB
9.5	25.5	30.7	
9.5	45.0	4.3	
9.3	51 27.1	32.8	
9.5	32.0	45.0	B
9.5	37.6	28.0	
9.4	45.2	31.8	
9.5	52.5	28.3	
9.5	59.0	7.5	
	+	—	
10pr.	32.69	2.75	

2181—2240

m	9ᵐ—10ᵐ	+14°	
9.5	52′ 7.6	41.6	
9.0	9.2	55.9	Kb
*9.5	47.5	58.9	
9.5	53 2.5	35.3	
9.5	19.6	42.3	B
8.3	32.5	37.7	K
9.0	43.6	30.8	B
9.5	52.3	6.1	
9.5	54 11.6	24.1	
9.1	21.5	59.4	K
9.5	46.7	37.3	B
8.8	55 2.8	50.4	K
7.7	47.7	10.0	K
9.5	56 26.9	41.2	
9.5	29.1	48.2	
8.2	37.5	17.8	K
9.4	57 49.9	27.6	
9.5	56.5	34.6	B
9.4	58 1.5	45.1	B
9.5	19.5	11.0	
9.4	38.5	12.0	
8.8	59 11.2	52.2	
9.0	32.9	38.8	
9.5	0 3.9	34.2	
9.5	5.0	16.8	
9.3	38.5	17.9	
9.5	1 44.6	35.3	
9.3	46.5	16.1	
9.5	53.5	17.9	B
9.2	2 0.2	22.1	
9.2	2.6	30.1	b
9.3	12.6	16.9	
9.5	23.5	46.8	
9.5	42.5	31.1	
9.5	3 3.9	51.0	
9.2	11.6	11.0	
7.0	50.9	4.0	K
9.0	4 0.0	6.3	
9.0	3.8	47.8	
9.5	16.2	27.6	
9.0	6 7.7	35.6	R
9.3	26.2	3.9	
9.5	54.5	7.5	
9.5	7 4.5	7.5	
9.0	8 2.3	10.3	K
9.5	30.4	33.4	
9.5	49.1	9.7	
5.7	53.7	27.9	K
9.5	10 26.2	17.0	
8.3	39.2	39.8	K
9.5	11 13.5	33.4	B
9.0	12 4.0	54.4	
9.0	6.2	10.8	Kb
9.5	14 32.2	35.8	
9.5	56.1	42.9	B
9.0	15 28.2	58.7	Kb
8.7	39.9	38.4	K
9.5	40.0	40.1	
var	16 16.8	44.1	
9.0	17 1.7	18.8	
	+	—	
10pr.	32.42	2.90	

2241 — 2300

m	10ᵐ	+14°	
9.3	17′ 6.1	49.5	B
9.5	18 5.3	41.0	
8.9	46.2	59.5	K
7.8	19 0.7	22.5	Kb
9.4	22.3	49.3	B
9.5	30.4	9.7	
9.5	20 10.5	57.4	
9.5	13.6	54.1	
9.2	18.3	50.0	
9.5	58.2	25.3	
7.8	58.7	1.5	K
8.8	22 2.2	54.1	K
9.5	3.9	11.1	
9.5	52.9	55.7	a
6.0	24 28.2	52.9	Kb
9.5	48.3	20.5	
9.0	25 32.7	36.1	K
9.5	39.2	46.0	B
9.5	43.9	24.4	
9.2	52.9	52.3	
8.8	27 13.7	20.7	Kb
9.3	21.7	26.9	
9.5	32.2	17.7	
9.4	58.8	53.8	
9.1	28 5.2	24.3	B
7.6	30.2	33.3	K
9.4	38.4	3.8	B
9.5	48.5	50.0	
7.8	29 1.9	48.0	K
9.5	17.2	16.7	
9.1	20.2	56.1	
9.3	35.2	45.4	
8.8	30 21.2	52.6	K
9.1	25.2	18.4	b
8.5	42.7	42.6	K
9.4	50.7	32.3	
8.5	31 0.6	46.8	K
9.2	31.4	42.8	B
9.5	32 15.3	13.2	
9.2	51.1	18.2	Rb
8.0	33 54.2	44.0	K
9.5	34 0.6	16.7	B
9.0	8.7	41.0	K
8.5	14.2	31.2	L
8.5	22.8	12.9	K
9.5	46.3	47.9	
9.1	35 45.5	9.0	
9.5	36 36.4	18.1	
9.5	56.3	57.8	B
9.5	37 37.5	5.5	B
9.5	40.0	56.2	B
9.5	42.3	1.0	
9.1	52.9	31.9	B
5.8	38 44.1	58.3	Lb
9.1	52.1	20.2	K
9.3	39 20.0	58.7	a
9.0	28.0	25.5	K
8.5	43.1	8.0	K
8.5	40 21.5	59.0	K
9.5	41 22.1	57.0	
	+	—	
10pr.	32.05	3.08	

2100a

9.5	21 37.8	3.8

2182a

9.5	52 46.6	54.1

2301—2360

	10ʰ—11ʰ	+14°	
m	′ ″	′	
9.0	41 53.9	58.4	
9.4	42 32.2	33.0	
9.5	43 14.0	9.6	
9.5	26.7	52.7	B
8.0	51.7	27.1	Kb
9.5	44 0.6	5.0	
8.0	5.2	20.6	K
9.0	27.7	37.9	
9.1	47.5	51.0	b
9.3	45 1.7	42.7	B
9.5	35.0	14.8	
9.4	46.7	12.3	B
9.5	47 6.7	28.0	B
9.1	9.9	3.7	b
9.5	24.6	26.1	B
9.5	46.2	41.0	
9.5	48 4.7	27.2	
9.5	47.0	11.3	
8.2	49 6.2	20.9	Kb
9.5	12.2	17.4	
9.1	32.7	49.3	K
9.5	40.2	34.9	a
9.2	50 16.2	5.6	K
8.3	40.5	3.2	K
9.5	51 2.8	53.3	
9.5	52 5.2	40.7	B
9.5	39.7	41.4	
9.5	53 19.1	13.8	B
9.5	19.2	26.8	
9.0	27.2	49.0	
9.1	54 28.2	29.9	K
9.0	32.2	23.6	K
9.5	57.7	23.0	
9.5	55 17.4	42.7	
9.3	59.5	25.4	
9.5	56 4.5	3.5	
9.5	17.2	40.4	
9.1	32.1	30.7	L
9.5	49.7	25.8	B
9.5	58 40.2	12.5	a
8.9	59 14.2	41.7	
9.4	26.8	44.2	a
9.4	0 1.8	53.5	
7.5	2.7	17.1	K
7.0	3.4	38.2	K
9.5	1 1.2	23.4	
9.5	20.2	7.9	
9.4	23.2	27.3	
9.5	27.8	52.3	
9.5	37.8	44.1	B
8.8	2 5.2	3.6	L
9.3	15.7	44.5	
9.5	45.2	18.1	
9.5	3 4.4	10.5	
9.1	19.5	22.7	K
9.5	39.0	5.2	
9.5	4 48.4	14.0	
9.5	49.7	8.8	
9.1	5 31.2	2.6	K
9.5	6 3.7	28.9	
	+	—	
10pr.	31.70	3.21	

2361—2420

	11ʰ	+14°	
m	′ ″	′	
9.0	6 13.9	1.7	K
9.5	21.9	26.1	
9.4	45.6	51.8	
9.4	7 19.3	46.4	
9.5	35.0	32.1	
9.3	47.3	12.0	B
5.4	8 16.9	5.8	P
9.1	9 8.2	53.3	Kb
9.5	10.6	14.0	
9.5	16.5	50.9	
9.3	21.1	17.0	
9.5	37.3	8.3	
9.3	10 4.7	11.0	
7.0	11 33.4	11.0	B
9.2	46.8	34.4	
9.5	12 14.6	57.3	
9.3	32.2	31.0	
9.3	35.7	15.9	
9.1	13 41.2	28.8	K
9.5	14 13.3	15.2	
9.2	46.4	43.4	K
8.2	16 43.2	41.6	K
8.6	44.2	57.7	L
8.6	51.8	44.6	K
9.2	17 46.6	5.6	
9.2	55.4	23.6	b
9.3	18 16.4	47.1	
9.2	33.8	37.7	
9.3	19 30.3	14.5	
9.5	33.0	31.8	
9.5	45.2	22.5	
9.5	55.2	4.8	
8.6	22 35.7	54.8	Lb
9.2	40.1	45.8	K
9.3	23 7.6	50.3	B
9.3	16.1	29.4	
8.8	37.0	19.2	K
9.5	24 9.6	37.9	
9.5	50.8	14.6	B
8.7	56.2	6.7	
9.0	25 3.9	31.2	
9.1	33.1	6.1	K
9.4	42.2	55.3	
8.1	26 24.6	22.0	Kb
9.5	56.8	18.3	
9.0	59.8	7.1	K
9.4	27 42.8	38.6	B
9.5	50.1	10.2	
9.3	54.7	8.7	
8.7	29 26.8	49.7	L
9.5	32.0	36.8	
9.5	30 14.7	52.0	
9.5	21.5	45.9	
9.2	38.1	23.4	b
9.3	58.1	40.7	K
9.0	58.8	44.5	K
9.5	31 43.5	14.1	
9.5	32 5.3	11.7	
9.5	15.0	56.3	
9.5	29.4	52.2	
	+	—	
10pr.	31.32	3.29	

2421—2480

	11ʰ—12ʰ	+14°	
m	′ ″	′	
9.5	32 50.0	29.1	
8.7	33 41.2	34.8	K
9.5	34 21.8	25.7	
9.5	57.7	26.4	a
8.8	35 43.8	24.9	
9.0	36 12.7	19.1	K
9.0	14.5	19.5	K
9.5	37 26.7	42.0	
9.3	36.8	47.9	K
9.3	41.9	52.4	K
8.7	51.5	6.7	L
9.2	54.4	16.7	
8.5	38 21.2	25.6	L
8.3	55.1	55.6	K
8.5	39 2.0	29.5	K
9.5	12.0	34.7	B
8.7	57.2	11.6	K
8.7	40 23.0	15.9	K
9.5	41 15.2	4.9	
9.5	42 24.5	10.0	
8.8	43 26.2	23.9	K
9.5	27.0	2.6	
8.8	44 50.8	17.3	K
8.5	45 25.3	33.3	
8.0	29.2	13.7	K
9.5	46 0.8	53.1	
8.2	24.3	49.6	K
8.3	47 6.6	58.0	K
9.3	29.3	33.7	
9.1	30.7	42.7	
8.5	48 0.7	25.6	K
7.5	59.6	59.6	Kb
9.3	49 27.2	11.1	
9.3	30.8	24.6	
9.5	35.4	1.2	
9.5	50 0.8	11.1	
8.3	36.2	51.0	Kb
9.5	51 29.8	56.9	
9.5	38.0	12.5	
9.5	52 52.3	59.0	b
9.5	57.8	38.2	
9.5	53 14.6	6.7	
8.9	30.5	26.7	
9.5	31.5	36.0	
9.3	38.5	30.2	
9.5	54.8	49.8	
8.8	54 19.3	12.5	Kb
9.5	55 10.7	9.5	
9.5	56 19.7	27.0	
9.5	22.2	8.8	
8.2	57 45.2	16.9	K
9.5	58 16.1	48.9	
9.3	59 24.2	28.0	
8.2	0 12.2	20.1	K
9.3	47.8	7.4	B
9.3	58.8	51.7	Bb
8.7	3 51.0	21.5	K
9.2	4 22.3	22.2	
9.1	32.1	48.6	K
9.1	35.7	52.7	K
	+	—	
10pr.	30.90	3.34	

2481—2540

	12ʰ	+14°	
m	′ ″	′	
9.0	4 40.0	4.6	
9.1	5 0.8	22.6	b
9.0	9 9.2	56.4	
8.7	17.6	5.8	Kb
9.5	11 6.0	42.3	
8.8	38.5	10.7	K
9.5	12 7.3	43.3	B
9.5	31.2	27.0	
7.2	43.6	39.5	K
9.3	13 12.3	33.0	
9.2	25.1	6.7	b
9.5	26.3	19.5	
9.5	49.0	38.9	
9.3	15 6.2	54.8	
8.5	54.8	25.6	K
9.5	55.7	46.1	B
8.3	16 11.8	42.5	K
9.5	25.6	32.7	
9.0	31.4	56.6	
8.9	34.8	51.0	K
9.3	18 32.0	34.3	a
8.3	19 32.4	51.8	Kb
9.1	20 38.3	14.1	Bb
9.3	21 2.3	17.7	
9.2	13.4	45.2	B
9.5	44.5	1.8	B
8.6	44.6	45.1	K
9.3	22 17.7	56.0	
9.3	23 8.3	15.9	
9.5	24 2.5	50.3	
9.5	34.8	25.6	B
9.3	58.6	28.4	B
9.3	25 3.9	23.3	Bb
8.9	53.8	47.5	
9.3	26 39.2	40.1	
9.3	27 23.6	46.1	
9.4	44.0	22.2	
9.3	28 26.5	55.9	
9.3	36.8	17.6	
9.5	29 26.8	4.2	
9.3	30 38.7	10.5	B
9.3	31 4.8	7.9	
6.5	17.8	36.4	K
9.3	31.6	46.5	
8.8	34.2	35.3	L
9.3	39.2	1.9	
9.2	42.1	41.1	K
8.8	42.2	34.9	K
9.2	44.5	3.3	
9.0	32 57.3	13.5	b
9.3	33 26.8	7.5	
9.4	36.7	43.8	B
8.6	34 44.9	57.0	Kb
9.3	37 8.8	15.6	
9.4	12.3	47.8	
8.7	17.5	9.5	Kb
8.5	39.2	17.0	K
8.2	38 9.3	13.1	K
8.2	39.3	21.2	K
8.8	46.3	30.5	
	+	—	
10pr.	30.36	3.32	

2541—2600

	12ʰ—13ʰ	+14°	
m	′ ″	′	
9.3	39 0.3	20.5	
9.3	11.3	59.3	
8.8	27.6	33.7	?
7.5	48.0	24.6	L
8.1	40 34.8	12.5	K
6.5	58.8	21.1	K
8.2	41 30.0	6.1	L
8.7	33.0	49.8	K
5.9	38.5	55.0	Kb
9.3	42 4.4	33.9	a
9.3	39.6	34.2	a
9.2	43.3	3.9	
9.4	43 54.3	28.8	B
9.3	44 6.2	23.2	B
9.3	41.6	18.3	
9.3	45 18.4	19.4	
9.2	53.0	48.0	b
8.5	46 6.0	7.9	
9.5	51.7	6.0	
9.5	47 39.0	32.6	
9.3	42.1	35.9	
9.3	48 50.0	49.7	a
9.4	53.5	59.2	
9.5	49 18.5	48.6	
9.0	50 14.3	50.7	
9.5	52 35.2	13.5	B
7.8	53 8.8	38.0	K
9.3	54 3.6	18.0	
9.5	55 25.7	14.0	a
9.3	29.4	47.1	
9.4	31.9	35.0	B
8.2	38.1	14.2	K
9.5	44.5	57.7	B
9.3	59.8	53.9	
9.5	57 33.0	26.9	
9.5	58 6.3	3.9	B
9.5	11.3	53.3	
7.4	21.6	0.7	K
8.5	59 1.0	13.1	K
9.5	1 43.6	58.7	
9.4	55.0	53.7	
9.5	2 46.8	57.7	
9.5	49.0	38.3	
7.0	3 35.0	5.3	K
7.5	56.7	41.5	K
7.5	6 7.1	10.7	K
9.5	58.9	46.4	
9.3	7 33.7	38.0	b
9.4	9 7.9	11.3	B
8.9	49.0	56.5	
5.5	10 5.3	26.5	K
9.5	27.2	9.5	
7.8	30.1	31.7	K
9.3	34.7	37.1	
9.3	11 6.7	57.1	
9.3	12 13.6	36.6	
9.0	36.4	48.0	
9.3	59.3	50.8	
8.4	13 37.5	32.8	K
8.9	42.5	7.8	
	+	—	
10pr.	29.89	3.24	

2312a

var	45	58	29.2	

2406a

9.7	27	10.1	47.4	B

2601—2660

m	13ʰ	+14°	
9.2	14′ 7.0	37.1	
7.7	13.0	54.7	K
9.3	46.3	49.8	
8.8	15 36.5	38.1	
9.2	45.5	4.7	
9.3	55.4	14.5	B
9.1	16 34.2	48.3	Bb
9.3	17 1.7	58.5	
9.3	8.0	44.7	
9.3	11.0	41.3	
9.3	18 31.0	52.6	
9.2	49.0	25.0	b
9.3	55.5	14.3	
9.5	19 29.0	22.0	
9.5	20 12.7	42.0	
9.3	17.0	19.2	
8.2	23.5	39.9	K
9.3	45.5	10.9	
9.3	53.2	42.8	
9.1	54.0	18.1	
5.5	21 20.5	34.5	Kb
8.8	33.0	28.5	K
9.5	49.5	17.4	
9.5	57.5	40.2	
8.8	22 16.2	0.7	K
9.3	23 39.4	8.8	
9.3	39.5	35.4	
9.5	44.5	13.0	B
9.5	24 57.0	22.9	
9.1	25 39.5	34.7	K
9.5	49.5	36.0	
9.5	26 28.4	9.0	B
9.5	36.2	59.6	
9.3	39.5	24.3	
8.0	27 12.3	59.7	K
7.6	13.9	52.2	K
8.7	29 9.0	22.9	K
8.8	21.2	32.6	K
9.3	32.0	32.6	
9.3	34.1	41.6	
9.4	30 2.5	20.8	
9.1	14.2	5.6	K
8.5	47.2	11.1	K
9.5	31 6.0	17.4	
8.8	57.5	18.5	K
9.3	33 11.0	14.3	
8.2	41.5	53.1	Kb
9.4	34 25.2	8.8	
8.7	31.5	5.6	K
8.1	52.2	51.2	K
9.1	35 42.5	13.6	K
9.5	52.0	42.6	
9.1	36 34.0	54.6	K
9.3	34.2	43.3	
9.2	34.5	16.7	K
9.2	49.0	19.7	Kb
9.5	38 15.3	33.6	
9.5	59.5	4.0	
9.3	39 21.5	5.6	
9.1	24.6	57.3	b
	+	—	
10pr.	29.46	3.11	

2661—2720

m	13ʰ—14ʰ	+14°	
9.5	39′ 34.0	53.6	
9.3	39.9	11.1	
8.5	41 0.0	22.9	
7.8	1.2	4.0	K
9.3	42 10.2	22.9	
9.3	18.0	30.8	
9.3	30.5	19.5	
9.4	56.7	49.9	
9.0	59.6	12.0	K
9.5	43 11.2	5.6	
9.3	44 2.6	26.5	
9.5	30.0	8.0	
9.5	41.4	7.2	
9.2	44.8	46.5	B
8.6	49.5	38.9	B
8.5	54.6	45.5	K
9.4	46 25.7	58.2	
8.3	59.3	33.1	K
9.3	47 15.0	57.2	
6.7	48 51.8	47.3	K
8.5	55.9	27.4	K
9.5	50 8.3	36.7	
9.4	43.1	5.2	
9.5	51 38.3	12.4	
9.5	53 14.6	33.4	
7.3	54 19.3	26.4	K
9.0	23.1	31.5	K
9.3	51.2	57.2	
9.5	57.4	10.8	
9.3	55 33.7	45.0	
8.7	51.1	58.7	K
8.7	56 7.7	20.0	K
9.0	56.5	51.9	Kb
9.1	57 19.1	58.8	K
9.3	19.4	2.4	
9.5	58 24.3	27.8	
9.3	57.1	24.4	
9.4	59 11.9	33.0	
9.4	14.8	3.9	b
var	29.3	11.5	
9.2	46.1	45.0	K
9.3	0 9.9	41.5	
9.5	1 7.0	8.1	
8.7	2 15.7	49.8	K
9.3	17.9	31.5	
9.5	24.8	26.6	B
9.3	3 17.5	42.0	
9.3	31.4	37.5	
9.1	31.8	29.7	L
8.9	4 13.9	14.2	K
9.1	5 33.0	59.4	K
9.1	35.0	29.2	Bb
9.4	37.7	28.0	B
9.5	6 19.0	51.3	
9.0	54.2	20.0	
9.1	7 9.7	0.3	
9.5	26.6	12.9	
6.8	40.0	40.0	B
9.5	8 10.6	25.3	
9.3	10 11.7	5.0	K
	+	—	
10pr.	29.05	2.92	

2721—2780

m	14ʰ	+14°	
9.0	10′ 40.3	24.2	K
8.5	51.3	34.5	K
9.3	12 15.0	43.3	
9.5	43.5	54.1	
8.8	13 35.0	34.5	K
9.5	14 34.5	51.7	
9.5	43.6	14.0	
9.0	15 16.3	29.9	K
9.1	39.9	54.5	b
9.2	49.3	34.9	K
9.2	16 31.0	55.1	K
9.1	17 28.2	23.4	L
8.0	19 3.8	5.4	K
8.5	5.5	44.3	K
9.5	10.4	5.7	
8.7	30.0	16.5	K
9.5	45.7	37.0	
9.5	21 43.8	31.1	b
9.5	23 14.7	31.5	
9.5	27.3	6.5	
9.3	31.7	9.0	
8.7	44.0	11.0	Kb
9.3	44.8	19.4	
9.5	50.7	53.0	
9.0	25 46.3	32.9	K
7.0	54.7	43.3	K
8.2	59.3	29.0	K
9.5	26 3.2	3.4	
9.2	17.3	4.1	
9.5	24.2	10.4	
9.0	34.0	52.8	K
9.5	27 18.4	53.8	
9.5	42.3	56.5	
8.7	43.2	12.8	L
9.5	29 0.8	38.5	
9.2	10.7	19.0	K
9.0	41.4	59.3	L
9.3	46.5	56.4	aB
9.3	30 18.2	57.3	
9.2	50.2	55.9	
8.8	31 21.0	39.5	
9.2	38.4	28.2	Kb
9.4	43.9	49.3	
9.0	50.4	55.2	K
9.5	32 20.0	35.8	
9.5	55.4	48.8	B
9.2	33 17.0	28.8	
9.5	33.2	3.0	
6.5	46.3	9.4	L
3.5	34 14.4	22.2	L
8.5	38.4	13.6	K
9.1	51.9	11.5	K
9.5	35 27.5	59.6	
9.5	36 11.4	4.8	
9.5	58.1	5.9	
9.5	37 24.0	45.0	
9.5	45.2	12.5	
9.5	38 33.5	37.1	
7.8	34.2	28.1	K
9.5	54.9	19.8	
	+	—	
10pr.	28.66	2.68	

2781—2840

m	14ʰ—.5ʰ	+14°	
9.5	39′ 13.0	51.7	
9.4	18.4	20.2	
9.5	34.7	36.4	B
9.2	39.5	22.2	
9.5	59.5	8.9	
9.1	40 27.9	16.3	K
9.0	41 2.7	26.0	K
9.0	11.4	33.3	K
9.5	56.0	18.3	
9.5	42 25.4	4.8	
9.5	43.1	11.5	K
9.5	43.9	48.5	
9.5	43 15.5	35.8	
8.8	52.7	34.0	
9.2	56.4	4.6	B
8.3	44 29.2	17.7	B
8.0	40.1	5.2	K
9.5	45 43.5	21.2	
8.8	46.9	41.2	K
8.8	53.2	33.3	K
9.5	46 1.7	42.3	B
9.5	34.6	14.3	
9.5	40.0	18.9	
9.3	47 29.5	30.5	
9.5	39.0	20.8	
9.5	59.4	51.3	
9.5	48 21.7	57.8	
9.3	33.8	23.5	
9.0	58.9	14.6	K
9.5	49 22.5	1.3	
9.0	37.5	49.5	K
7.0	51 26.9	36.5	L
9.5	33.6	5.8	
9.5	38.0	58.0	
9.2	53 10.5	55.4	
9.5	17.9	20.5	
9.5	29.6	30.3	B
9.5	53.9	12.1	
9.5	54 20.2	1.7	
9.5	33.4	6.3	
9.0	55 13.4	36.5	
9.5	33.5	39.6	
8.3	50.1	2.0	K
9.0	56 2.0	50.2	
9.5	7.4	33.3	
9.5	29.0	42.0	
9.5	53.9	34.7	
8.0	57 29.9	12.2	K
9.4	58 6.5	17.7	
9.0	17.9	39.2	Kb
8.5	19.4	12.2	K
9.0	31.9	12.2	K
9.5	44.2	11.1	
9.5	59 24.1	8.5	
9.5	27.2	56.7	
9.1	56.9	31.6	L
8.5	0 8.0	38.9	K
9.5	1 2.9	14.3	
9.1	7.1	55.3	Kb
8.7	2 10.0	12.8	Kb
	+	—	
10pr.	28.39	2.46	

2841—2900

m	15ʰ	+14°	
9.5	2′ 15.9	53.8	
9.5	3 10.2	1.4	
8.9	4 10.2	48.6	K
9.5	30.1	14.0	
9.2	5 20.3	54.4	Kb
9.5	23.2	5.6	
9.5	6 42.2	58.0	
9.1	55.6	28.5	b
9.5	57.6	38.8	
8.3	^	59.7	K
9.5	7 44.2	54.1	
8.7	8 11.8	17.8	K
6.8	9 17.2	1.0	K
9.0	21.3	59.9	K
9.4	49.6	24.6	
8.5	10 7.6	46.6	K
9.5	29.6	17.8	
9.5	44.1	47.6	
9.5	56.1	44.5	
9.1	11 25.6	43.7	B
9.0	56.6	17.8	K
9.3	14 17.1	41.8	
7.8	30.2	2.8	K
var	52.2	49.3	L
9.5	15 29.1	13.2	
7.9	16 32.6	33.6	L
9.5	17 8.1	12.6	
8.5	33.1	36.3	K
9.0	18 7.6	29.1	
9.1	25.6	20.2	
9.4	39.5	54.5	
9.3	43.6	40.5	
8.8	48.5	58.5	K
9.5	19 23.1	47.3	
9.5	44.1	12.9	
9.2	55.2	50.9	
9.5	20 0.6	16.4	
9.5	28.9	2.6	
9.4	29.5	8.3	
9.5	41.6	30.1	
9.5	21 38.6	18.5	
9.5	44.5	0.3	
9.5	50.3	6.4	
9.3	22 30.9	23.5	Bb
9.5	42.6	19.8	
9.4	23 6.7	38.7	B
9.4	12.7	45.7	
9.5	24 26.3	20.8	
7.8	53.9	47.4	K
7.8	59.0	34.9	K
9.3	25 30.1	25.0	B
9.4	36.5	30.3	
9.4	38.0	24.2	
9.1	26 2.9	22.5	K
9.3	15.6	47.2	
9.5	27 9.6	8.7	
9.3	11.9	57.3	b
9.5	34.2	35.9	
9.5	28 4.2	36.3	
9.5	34.9	55.2	
	+	—	
10pr.	28.08	2.17	

2901—2960

	15ʰ		+14°	
m	′	″	′	
9.5	29	0.0	6.0	B
9.3		10.1	38.6	Bb
9.4		17.6	24.9	
9.5		47.2	38.7	*a*
9.4	30	14.6	11.2	
9.5		22.9	46.5	
9.3		31.9	25.0	
8.9		38.0	4.2	K
9.5		53.7	38.0	B
9.0	31	7.6	37.2	B
9.0		16.9	15.3	K
9.0		28.6	26.9	K
9.5		47.1	8.7	
9.1	32	13.4	0.1	K
9.4	34	10.3	45.5	K
9.3		13.2	34.5	
9.0		48.4	39.9	K
9.3	35	18.6	24.6	
9.5		36.6	37.6	
9.1		59.4	11.5	K
9.1	36	1.6	27.8	
6.8		24.7	8.3	K
9.4		25.7	57.5	
9.3		40.9	58.9	*R*
9.5	37	1.1	58.0	
9.5		7.2	32.5	
9.5		38.0	7.0	
9.5		45.2	35.7	B
9.5	38	32.6	59.2	
9.0	39	5.6	29.4	
9.5		23.6	25.6	
9.5		32.2	54.7	
9.1		32.4	13.6	K
9.1		34.3	13.9	K
8.1		37.2	10.7	K
8.8	40	2.8	57.1	
9.5		24.9	21.2	
9.5		29.9	58.3	
6.0		32.9	34.5	K
7.0	41	28.2	14.6	K
9.0		32.9	28.0	K
9.5		51.2	45.6	
9.0	42	5.0	51.6	K
9.0		16.0	46.1	K
9.5		55.1	23.5	
7.7	43	9.6	30.8	K
9.5		24.2	36.2	
9.5	44	23.3	16.4	
9.4		41.0	25.6	B
9.5		47.3	3.6	
7.8		49.0	21.0	K
9.4	45	3.5	27.1	B
9.5		34.6	42.0	
9.5	46	10.6	36.9	
9.0	47	31.2	42.8	
9.0		31.6	59.6	
9.5		32.5	10.0	
9.1		35.0	0.8	*b*
9.4		54.6	27.7	
8.2	48	43.6	43.1	K
10pr.		+ *27.90*	— *1.93*	

2941*a*
9.7 | 41 48.8 | 17.6 | B

2961—3020

	15ʰ—16ʰ		+14°	
m	′	″	′	
9.5	48	56.2	49.0	
9.5	49	42.5	55.0	
8.7		43.4	17.9	Kb
9.5		46.3	29.6	
9.3		52.8	50.7	
9.5		59.9	17.1	
9.5	50	9.8	27.9	
9.5		31.6	37.6	
6.0		33.2	50.1	K
9.5		54.1	53.7	*a*
8.5	51	17.3	57.4	K
9.5		51.9	2.0	
8.8	52	51.6	35.8	K
9.5	53	9.2	34.4	
8.8		29.6	36.0	K
9.3		30.1	41.7	K
9.4		51.1	12.6	
9.1	54	21.8	1.8	K
9.5		40.8	44.5	
9.5	55	2.2	49.1	
9.5		30.3	55.2	
9.5		48.3	22.1	
9.2		52.6	11.2	
8.1	56	19.6	24.2	Lb
9.5		26.0	21.2	
8.8		34.1	41.0	
8.8		36.1	15.4	K
9.0	57	4.3	31.6	L
9.5		32.2	14.4	
9.3	59	8.0	50.4	
9.5		33.6	28.2	B
9.1		33.7	31.3	*b*
9.5	0	0.5	38.2	
9.0		24.5	21.4	
9.3		27.8	36.8	
9.5		47.0	24.4	
9.4		48.8	46.8	
9.5	1	3.9	3.6	
8.0		13.9	49.4	K
8.8		52.5	16.8	
9.0	2	8.2	30.5	K
9.5		32.2	18.5	
9.5	3	36.5	12.0	
9.5		47.0	12.9	
9.5	4	8.5	15.6	
9.5		9.4	44.7	
9.5		10.8	22.7	
9.5		35.7	28.4	
9.2		58.4	5.0	*b*
9.0	5	5.9	39.1	
8.7		26.0	55.2	K
8.2		27.6	55.5	K
9.2		44.2	5.8	
9.4		49.5	14.5	B
9.5	6	3.6	0.6	B
9.4		36.7	18.3	
9.5		39.3	37.6	
9.5		46.7	0.0	
9.3	7	38.3	59.6	K
9.4	8	21.1	6.3	
10pr.		+ *27.74*	— *1.68*	

3021—3080

	16ʰ		+14°	
m	′	″	′	
9.3	8	27.6	20.6	*B*
9.4		46.9	12.5	
9.4	9	4.7	12.5	
9.2		8.6	14.1	Kb
8.1		10.5	22.5	K
9.5		24.9	48.0	
9.0		26.2	44.2	
9.5		32.3	4.3	
8.9		53.6	40.3	
9.5	10	36.5	20.1	
9.5		58.6	58.3	
8.6		59.4	3.8	R
9.4	12	1.2	20.8	*b*
9.3	13	37.0	43.3	
9.4	14	23.2	52.5	Kb
9.5		30.9	47.3	
9.4		46.5	58.2	
9.4		59.7	55.4	aB
9.4	15	28.2	21.5	
9.1		44.1	43.5	
9.0		46.1	55.3	K
7.7	16	24.6	10.5	L
9.5		53.5	53.2	
9.1	17	14.0	34.3	
9.5		40.4	10.8	
8.9		50.1	9.8	
8.6	18	10.0	49.3	K
9.5		23.9	31.1	
5.2		44.5	22.2	K
9.0	19	4.9	26.0	K
8.6		8.8	41.3	K
9.0		11.3	9.3	
9.4		13.3	45.2	B
9.3		20.2	15.6	
9.3		22.5	17.4	
8.2		29.6	38.0	K
9.3		56.2	31.8	
9.4	20	14.2	24.6	
9.5		23.9	32.2	
9.0		44.5	56.7	K
9.0	23	8.5	35.0	
9.5		8.9	11.1	
8.5		14.0	35.1	
8.7		15.5	43.8	
9.3		39.6	27.9	B
9.5		44.2	0.8	
9.4	24	6.2	45.6	
9.3		8.5	21.2	
9.2		9.0	33.9	K
9.5		36.5	56.0	
9.5	25	7.5	35.7	
9.5		33.4	1.0	
8.8		45.2	25.9	K
9.5		45.8	40.4	B
9.0		51.9	13.2	
9.1		54.1	55.9	Kb
9.3	26	43.0	48.4	B
9.5	27	45.9	53.6	B
9.1	28	15.2	28.8	*ab*
9.5		23.9	5.2	
10pr.		+ *27.60*	— *1.42*	

3081—3140

	16ʰ		+14°	
m	′	″	′	
9.3	29	5.2	50.4	
9.5		13.4	22.6	
9.2		28.2	44.9	
9.2		47.7	4.1	
9.1		48.6	28.4	K
6.8	30	20.1	46.3	K
9.5	31	36.8	44.7	
9.4		56.8	15.9	
9.0	32	8.5	0.3	
9.5		21.3	43.2	
9.5		52.4	15.4	B
9.4		54.6	57.8	
9.2		58.2	18.3	K
9.2	33	51.2	33.8	R
9.5		53.9	22.9	B
9.5	34	3.9	25.9	
9.2		18.0	36.5	
9.2	35	3.0	30.1	K
9.5		11.3	2.8	
9.4		12.2	52.8	B
9.3		23.0	45.3	*B*
9.3		25.8	30.0	
9.0		36.5	30.4	K
9.5	36	12.0	17.7	
9.2		40.1	4.2	
9.5		46.5	9.8	
9.0	38	4.5	45.9	R
9.2		10.5	15.0	*b*
9.5		18.0	52.0	
9.5		25.5	9.8	
9.2		33.2	0.6	K
9.5	39	57.5	23.2	
9.0		58.0	15.3	Kb
9.5	40	9.6	1.2	
9.5		28.2	52.7	B
8.8		55.7	39.5	B
9.5	41	0.5	34.8	B
9.5		8.7	35.9	
8.7		12.0	6.0	K
9.5	42	3.0	31.8	
8.5		6.5	21.5	K
9.4		24.6	0.7	
9.5	43	0.0	55.9	
8.8		12.5	17.6	K
8.3		23.0	17.6	Kb
9.4		27.1	6.5	
9.3		48.2	32.9	B
9.4		53.8	8.5	
9.5	44	35.5	31.4	
9.5	45	7.0	53.8	
9.5		11.0	49.2	
9.3		19.5	27.9	B
9.4		37.8	30.1	B
9.4		39.6	1.8	*a*
9.5	46	29.9	3.5	
9.0	47	16.2	1.4	
9.5		15.7	5.7	
9.1		42.5	20.5	*b*
8.3	48	17.2	48.6	K
9.0		30.5	34.5	
10pr.		+ *27.48*	— *1.16*	

3141—3200

	16ʰ—17ʰ		+14°	
m	′	″	′	
8.6	48	33.1	5.2	
9.5		45.5	15.0	
9.0		54.8	53.6	
9.5	49	17.0	23.6	
9.5		18.3	30.4	
9.1		35.0	22.1	
9.5		56.0	57.2	B
6.5	50	0.5	22.7	K
9.2		3.8	51.2	
9.5		9.1	3.7	
7.8		30.5	53.4	K
9.4		44.8	59.7	
8.7		45.5	58.4	K
7.7		52.0	16.0	K
6.5		53.5	7.3	K
9.4	51	1.1	0.3	
9.0		14.5	51.7	K
9.1		29.3	53.6	K
9.3	52	5.3	30.1	B
9.2		8.5	34.4	
6.8		33.5	18.4	K
9.4		38.9	2.7	
7.8		46.8	32.6	K
9.4		57.0	46.5	
9.3	53	2.2	45.6	
9.5		43.5	46.5	
9.0	54	6.0	13.2	K
9.4		16.0	20.4	
9.5		36.3	4.2	
9.5		40.0	57.0	
9.4		46.4	2.0	
9.5		47.2	15.0	
9.3	55	13.3	55.4	B
9.4		14.3	55.8	
9.3		23.2	57.2	
9.5		29.4	4.0	
9.5	56	17.5	29.8	
8.0		18.3	54.3	K
4.8		29.0	20.1	Kb
6.5		35.5	45.2	K
9.3	57	14.7	25.8	B
9.4		22.4	25.3	B
9.5		57.5	58.7	*a*
9.4	58	17.0	20.1	
8.8		25.1	4.8	
9.1		27.7	52.0	
9.5		41.9	50.4	
9.3		42.5	18.7	B
9.5		46.5	26.3	
9.1	59	33.8	1.2	
9.5	0	29.0	47.6	
9.5		36.5	37.3	
9.4		43.6	56.8	
9.3		51.5	16.6	
9.3		53.5	35.5	K
9.5	1	30.4	0.4	
9.5	2	10.0	17.4	
9.0	4	6.8	36.2	
9.0		8.8	8.9	
9.5	5	6.0	31.1	
10pr.		+ *27.40*	— *0.94*	

3201 — 3260

	17ʰ	+14°	
m	′ ″	′	
7.3	5 23.0	40.7	K
9.5	28.0	49.7	
8.2	7 12.0	45.1	K
9.4	28.5	16.3	
8.9	38.8	28.7	K
8.2	44.5	45.2	K
var	8 2.3	34.5	K
9.3	16.6	1.6	
9.5	25.7	29.4	
8.7	57.6	54.4	K
9.4	9 18.8	26.3	B
9.5	48.3	20.3	
8.1	56.7	49.8	K
9.4	10 2.5	45.0	B
8.3	29.3	50.7	K
7.9	37.7	3.2	K
8.8	46.4	29.2	
9.5	47.6	34.0	
9.0	11 13.1	28.9	
9.3	18.2	41.5	
9.5	24.9	51.5	
9.5	29.7	48.9	
9.5	31.2	15.1	
9.5	34.6	27.8	
9.5	12 17.8	8.5	B
9.3	21.1	11.8	B
8.8	51.1	4.2	
9.0	52.7	41.8	
9.3	14 3.6	19.5	
9.3	41.5	27.0	
9.3	49.1	25.5	B
8.5	57.9	36.7	K
9.5	58.0	20.3	
9.4	15 3.7	19.6	
9.5	8.9	50.4	
8.3	47.4	56.2	K*b*
9.4	52.2	4.9	B
8.4	53.6	49.4	K
9.4	16 0.0	13.0	
9.5	0.4	5.9	
9.3	26.7	34.7	
9.4	41.3	54.3	
8.3	50.2	54.6	K*b*
9.5	59.1	38.4	
9.5	17 30.0	0.3	
8.8	32.9	32.6	
9.0	37.1	54.1	
8.6	53.6	35.0	
9.0	18 45.2	5.2	B
9.5	19 2.3	5.4	B
9.1	8.1	8.7	
9.4	24.7	31.2	
9.5	47.6	15.8	
9.5	20 1.7	56.4	
9.4	15.6	40.5	*b*
9.5	42.2	38.1	
9.4	21 47.6	3.1	
9.4	22 11.6	4.2	
9.5	23 10.2	6.5	
9.5	24.1	46.6	
	+	—	
10 pr.	*27.33*	*0.65*	

3261 — 3320

	17ʰ	+14°	
m	′ ″	′	
8.5	23 27.7	33.0	K
8.2	56.2	39.1	L
9.5	24 16.6	49.8	
9.1	21.7	13.4	*b*
8.9	22.5	56.9	K
9.5	25 8.7	39.8	
9.5	15.2	29.8	*a*
9.5	38.8	8.3	
9.5	40.5	2.0	
7.0	49.1	30.4	L
9.2	56.7	13.4	
9.3	26 2.6	43.9	
9.5	28.7	57.6	
9.5	55.6	7.9	
9.5	59.0	56.8	
9.5	27 4.2	25.4	
9.0	5.1	15.8	
8.6	5.3	1.0	K
6.2	8.6	56.9	*B*
9.5	14.7	12.6	
9.3	19.0	52.2	
9.5	49.8	8.6	
9.3	28 52.1	51.2	
9.5	53.2	8.9	
9.5	58.4	4.5	
7.5	29 12.1	22.2	B
8.8	44.9	1.2	
9.4	30 0.1	42.9	
7.7	28.0	57.1	K*b*
9.5	35.4	4.1	
9.4	36.0	46.9	
9.3	41.2	47.4	
9.3	54.7	24.0	*a*
9.0	31 39.9	24.7	
9.5	56.1	20.2	
9.5	32 7.3	51.8	
9.5	7.9	7.8	
9.5	34.2	25.9	
9.4	51.6	25.0	
9.5	56.6	3.9	
9.5	33 27.6	47.0	
9.5	43.4	25.7	
9.5	45.6	4.5	
9.5	34 16.7	35.6	
9.5	28.6	41.8	
9.5	32.2	55.9	
9.1	35.5	47.2	*b*
9.5	42.7	53.2	
9.5	46.1	57.2	
9.3	49.0	43.8	
9.3	50.2	49.0	
9.5	55.4	33.6	
8.9	57.0	6.7	K
9.2	35 30.6	57.3	
9.3	33.3	59.7	
8.6	34.5	52.5	
9.4	49.7	15.0	
9.5	53.2	32.6	
9.5	36 8.6	31.2	
9.5	14.0	13.9	
	+	—	
10 pr.	*27.29*	*0.43*	

3321 — 3380

	17ʰ	+14°	
m	′ ″	′	
6.0	36 45.7	21.9	B
9.5	53.1	45.6	
8.5	37 8.6	48.4	
9.4	10.7	13.7	
8.4	12.7	1.7	K
9.3	25.2	27.7	
9.2	25.5	59.7	
9.2	27.6	21.2	
6.0	41.5	28.8	K
9.5	38 3.2	14.3	
9.0	39 2.4	56.2	
9.5	32.0	37.8	
9.5	42.0	6.6	
9.1	48.8	33.0	*b*
8.2	40 5.9	50.8	K
8.3	11.2	3.5	K
9.3	54.8	31.0	B
8.4	41 18.9	52.5	K
8.4	21.6	47.5	K
9.5	28.3	1.0	
9.5	29.6	56.3	
9.3	42 46.2	5.4	
9.5	53.0	48.9	
9.5	56.0	58.5	
9.5	43 17.8	37.8	
9.5	18.5	15.4	
9.5	18.7	9.3	
8.5	49.6	57.3	K
9.2	44 3.5	24.0	K
9.2	6.2	16.2	K
9.5	6.5	48.4	
9.3	21.8	5.7	
9.0	32.0	29.5	K
9.5	54.5	24.4	
9.0	45 17.7	37.8	K
9.5	28.3	51.6	
8.9	46 32.0	2.5	
9.5	36.0	6.3	
9.4	46.4	57.9	
8.6	49.9	49.0	
9.5	47 32.0	58.8	
9.1	33.8	51.3	*b*
9.5	43.0	10.9	
9.2	48 17.6	51.0	
9.5	30.1	30.1	
9.2	43.6	26.5	B
9.4	47.2	26.9	B
9.5	49 5.3	3.7	
9.5	29.0	16.7	
8.4	50 26.8	44.3	K
9.4	51 3.4	0.0	B
9.5	11.5	4.7	
8.5	12.4	1.6	K
6.5	45.0	31.5	K
7.8	48.1	37.3	K
8.9	54.1	20.8	
8.8	52 12.5	56.8	
7.0	12.6	52.2	K
9.5	53 0.1	11.0	
9.1	3.6	21.2	
	+	—	
10 pr.	*27.28*	*0.23*	

3381 — 3440

	17ʰ—18ʰ	+14°	
m	′ ″	′	
7.8	53 7.1	29.0	K
8.7	19.0	59.1	L
9.3	44.0	11.9	
9.0	53.5	45.3	
9.1	55.6	28.7	
9.4	54 28.4	30.3	B
7.3	31.1	8.3	K
9.3	33.8	8.0	B
9.5	55 27.8	24.6	
8.7	38.6	53.1	K
9.5	56.4	35.6	
9.4	56 14.1	3.7	
9.5	37.0	12.6	
9.5	48.2	55.0	
9.3	55.0	45.1	
9.5	57.2	26.6	
7.5	57.9	5.1	K
8.6	57 1.0	29.8	K
9.5	4.4	31.6	
9.5	9.0	28.4	B
8.5	9.5	33.6	K
9.2	14.6	1.2	
9.5	30.6	9.9	
8.0	36.0	46.2	K
9.5	42.6	16.4	
9.4	45.2	7.2	
9.2	54.8	54.4	K
9.5	57.6	59.2	
9.2	58 3.3	51.0	
9.0	16.6	34.0	
9.5	16.7	39.8	
9.4	17.8	23.6	B
8.7	53.3	23.2	K
9.5	59 0.1	8.5	
9.4	0 15.0	34.6	
9.5	17.4	8.0	
9.0	38.5	47.2	K
9.4	51.2	49.6	
9.4	52.0	55.9	*a*
8.2	52.5	52.8	K
9.4	1 2.9	13.8	
8.7	3.1	8.0	K
8.8	24.1	36.3	R
9.5	33.4	54.2	
9.4	52.8	43.8	*a*
9.5	56.0	41.0	
6.5	57.9	16.1	K
8.9	59.2	14.1	K
9.4	2 1.2	6.2	
9.5	3.4	43.2	
8.2	10.7	23.1	K
8.2	15.0	41.0	B
9.2	16.8	2.0	
9.1	20.0	7.4	
9.5	25.6	59.0	
7.9	34.7	0.3	K
9.3	35.5	14.4	
9.5	45.6	17.4	
9.1	48.9	4.3	K
9.3	55.5	41.6	
	+	—	
10 pr.	*27.26*	*0.03*	

3441 — 3500

	18ʰ	+14°	
m	′ ″	′	
9.3	3 31.5	28.6	
9.3	4 2.2	45.8	
9.5	22.9	41.5	
9.5	23.1	15.4	
9.5	5 8.1	29.3	
9.0	21.2	3.1	K
9.5	32.0	21.7	
9.5	32.8	31.7	
9.5	59.2	58.3	
9.5	6 11.5	55.6	
8.9	15.7	20.0	K*b*
9.5	57.5	31.6	*a*
9.3	59.4	57.1	
9.5	7 8.0	17.5	
9.5	25.6	22.1	
8.7	26.4	9.3	R
8.8	35.7	33.1	K
9.5	52.5	16.9	
9.5	8 7.0	23.4	
9.0	11.6	21.7	K
9.0	15.4	39.9	K
9.4	26.8	4.1	
9.5	43.5	46.5	
9.5	9 17.9	54.2	
9.5	19.7	14.4	
9.5	21.0	24.6	
9.5	10 3.3	0.8	
9.0	23.1	55.7	
9.0	28.3	9.1	
9.5	28.6	16.7	
9.3	46.7	22.5	R
9.4	11 2.8	18.5	
9.5	9.8	52.3	
8.7	10.7	32.1	R
9.5	11.0	0.0	*a*
9.5	12.5	35.2	
9.5	12.5	5.0	
9.5	12.9	46.8	
8.8	17.4	22.0	
9.4	34.3	20.5	
9.5	37.7	59.5	
7.8	12 3.2	19.7	K
9.5	5.6	32.1	*a*
9.5	14.5	7.3	
9.5	24.0	38.0	
7.5	28.5	31.2	*B*
9.5	13 4.6	39.7	
9.4	16.3	26.7	
9.5	27.5	6.1	
9.5	30.1	31.8	
9.4	36.0	43.5	
9.1	14 14.5	48.4	*b*
9.3	19.9	39.0	
9.3	29.1	3.5	
9.1	35.1	9.7	*a*
9.4	15 13.0	30.6	
9.5	19.0	30.4	
9.5	22.3	24.0	
7.8	27.4	35.3	K
9.5	30.7	40.2	
	+	+	
10 pr.	*27.27*	*0.16*	

8ᵃ—19ᵃ **+14°**

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	18ᵃ	+14°				18ᵃ	+14°				18ᵃ	+14°				18ᵃ	+14°				18ᵃ—19ᵃ	+14°	
m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′	
9.4	15 34.0	21.9			9.5	24 59.5	45.6			9.5	38 10.7	39.3			9.3	45 47.0	22.1			9.3	53 37.0	4.0		
8.6	35.4	9.2	K		9.5	25 6.9	9.6			9.5	32.7	21.6			9.3	48.0	21.2			9.5	51.9	33.5		
9.2	43.8	21.7	*a*		9.2	22.7	8.3			9.5	36.9	33.5			9.4	48.2	2.5			9.3	53.6	2.9		
9.5	16 5.6	7.2			9.5	25.2	2.1			9.5	47.4	40.5			9.4	57.3	22.2	*Rb*		8.2	58.8	28.9	L	
9.5	7.3	13.2			9.5	48.0	25.6			9.5	50.8	27.0			9.5	46 5.9	51.7			8.0	54 12.7	20.9	L	
7.1	16.2	56.2	R		9.1	26 1.8	2.2	*b*		8.9	58.7	16.6	K		9.3	7.7	28.6			9.5	12.9	45.8		
8.3	20.7	53.3	*Rb*		9.3	3.4	46.9			9.5	39 5.9	34.2			9.5	11.8	50.1			9.5	15.3	54.1		
9.4	23.7	11.6			9.5	3.6	32.5			9.5	7.4	33.6			9.3	12.0	41.4			9.5	18.6	4.9		
9.4	34.2	33.8			9.4	5.8	11.7			9.5	9.5	48.8			9.5	27.0	42.8			9.5	57.7	49.8		
9.2	42.3	21.8	*a*		9.3	16.2	56.8			9.5	12.6	31.5			9.5	29.6	38.1			7.7	55 28.4	13.3	L	
6.3	44.8	38.0	K		9.3	57.8	4.4			9.4	18.0	26.9			9.2	39.2	16.8	R		9.3	34.1	5.1		
9.5	47.5	41.9			9.5	27 11.8	48.6			9.5	22.6	5.0			9.3	44.9	11.5	*a*		9.5	35.1	15.5		
9.5	50.5	40.8			9.5	14.9	37.5			9.4	22.6	14.3			9.5	50.0	55.0			9.5	48.6	0.2		
9.0	52.0	21.0			7.5	37.6	22.0	K		9.5	40 2.5	7.8			9.5	58.9	50.9			9.5	55.0	33.0		
9.5	55.1	26.8			9.5	42.1	24.6			9.5	7.5	28.3			9.2	47 4.3	1.6			7.4	56 0.0	21.7	L	
9.4	58.4	36.2			9.3	47.5	27.0			9.2	8.1	2.0	*b*		9.5	5.5	8.0			9.4	5.1	27.1		
9.3	17 5.0	32.5			7.8	28 16.0	37.0	K		9.5	25.4	47.3			9.5	25.9	23.9			9.5	9.5	41.8		
7.5	11.5	50.1	L		9.4	20.7	48.0			9.3	28.3	28.4			9.3	28.6	19.5			9.5	10.2	10.9		
9.5	12.6	20.9			9.4	30.6	38.1			9.5	31.0	57.9			7.1	33.3	50.2	K		9.3	37.7	57.4	*a*	
8.4	22.3	31.4	K		7.9	32.6	59.8	*Kb*		9.5	31.4	4.2			9.5	52.4	35.8			9.0	40.7	57.6	R	
8.9	30.6	21.0			9.5	40.3	44.0			9.5	33.7	42.3			9.5	48 0.5	41.5			9.2	41.6	57.5	*a*	
9.4	18 1.3	25.7			9.4	41.0	55.3			9.5	51.3	29.0			9.5	0.9	48.2			9.5	50.5	55.0		
9.2	19.1	21.2			9.5	59.0	17.3			8.9	53.3	42.8			9.5	4.2	16.3			9.5	57 0.6	44.2		
7.8	26.0	4.1	K		9.5	29 13.8	47.3			9.3	41 32.8	23.3			9.5	23.9	32.8			9.5	7.9	27.4		
9.1	33.0	59.3	R		9.5	24.2	40.1			9.5	42.8	51.4			9.3	26.1	6.6			9.3	20.2	1.6		
9.4	40.1	2.7			9.5	27.5	47.2			9.5	43.3	36.0			9.2	30.9	43.2			8.6	21.4	9.0	K	
9.1	42.3	8.4			8.1	53.8	49.1	L		9.5	45.4	59.4			9.5	36.4	12.9	*a*		9.0	24.9	27.8		
9.2	51.2	35.2			9.2	30 3.9	17.5			9.5	58.0	48.8			9.5	41.4	9.8			8.1	27.2	34.5	K	
9.5	58.2	50.5			9.5	9.0	14.0			9.5	42 12.1	6.5			6.5	51.8	12.3	B		9.3	27.4	38.4		
9.4	58.6	12.9			9.4	14.1	17.7			9.4	18.4	10.5			9.2	49 6.0	7.8	K		9.4	30.1	53.9	*a*	
7.8	58.8	40.5	K		9.5	25.2	55.0			9.5	18.5	1.0			9.1	10.5	27.5	*b*		7.6	33.3	53.3	R	
8.9	19 15.1	21.9	K		9.1	37.5	27.9	K		9.4	25.2	10.7			9.4	19.4	59.8			9.3	41.4	34.8		
6.5	21.6	53.6	*Kb*		9.5	41.0	8.4			9.4	30.9	10.0			8.9	28.9	13.7	K		9.4	58 21.6	35.1		
9.5	24.0	41.4			9.3	42.9	39.8			7.0	36.0	29.8	L		9.5	32.3	58.8			9.5	41.6	48.1		
9.4	27.4	51.9			8.6	51.8	30.7	K		9.2	40.7	6.3			9.5	50 11.6	37.4			9.5	42.1	51.2		
9.1	42.8	9.1			8.1	56.3	45.4	K		9.5	49.8	59.2			9.3	17.9	37.9			9.4	57.1	50.1		
9.5	48.5	7.8			9.1	31 7.0	36.3			8.7	43 14.4	38.8	K		9.5	29.0	33.4			9.5	59 1.6	11.4		
9.4	53.9	51.6			9.4	19.3	28.9			8.9	35.2	8.9			8.8	35.3	48.0			9.3	5.1	22.9	K	
9.5	20 40.2	5.9	*a*		8.3	28.0	50.4	*Kb*		9.3	40.0	24.2			7.3	36.1	38.7	L		9.5	9.7	57.2		
9.4	47.7	45.7			8.6	31.1	5.0	L		9.5	44 8.5	20.5			9.4	46.6	12.9	*a*		9.5	9.9	13.6		
9.5	56.5	49.5			9.1	38.4	19.3			9.3	10.1	4.6			9.3	48.4	44.0			9.5	24.7	5.5		
8.3	21 16.5	37.1	K		7.5	46.1	15.9	L		9.5	18.5	34.1			9.5	51 3.2	31.6			9.1	29.1	58.7	*Kb*	
9.5	56.9	50.7			6.5	32 0.0	57.7	K		9.5	23.2	27.9			9.5	4.0	22.3			9.5	29.7	54.4		
9.5	22 6.6	35.2			9.5	28.5	36.0			8.8	26.1	51.2	*Rb*		9.4	4.0	11.5	*a*		9.5	32.0	15.6		
9.4	18.0	14.3			9.3	48.7	45.7	*Kb*		9.1	29.0	14.2	K		9.5	7.0	58.7			9.3	37.8	34.0		
7.6	18.7	54.1	*Kb*		6.9	33 15.3	57.8	K		9.5	34.2	47.3			9.2	6.8	53.2			9.5	0 39.6	3.2		
9.3	23 17.3	2.8			7.8	22.7	2.2	K		8.5	35.7	23.4	K		9.5	34.3	52.6			9.4	50.9	9.0		
9.5	19.5	18.3			9.5	56.8	8.0			9.5	36.4	31.9			9.5	53.5	55.8			9.5	58.0	49.5		
9.5	51.7	41.8			9.2	34 17.8	22.5	*a*		9.5	38.6	37.9			9.0	54.9	10.1			9.5	1 0.5	16.8		
9.3	24 1.1	14.5	*a*		9.4	48.5	50.9			9.5	40.2	48.1			9.5	56.4	44.3			8.5	13.4	26.8	*B*	
9.5	1.4	50.0			9.5	35 19.8	30.0			9.5	40.2	53.0			9.3	52 2.7	20.4			9.4	13.5	12.6		
8.5	2.2	48.6	K		8.5	24.3	20.5	K		9.5	44.3	5.5			9.4	33.0	3.7			9.5	29.4	41.5		
9.5	8.3	10.9			8.4	41.6	18.0	K		9.5	56.4	22.7	*a*		7.7	37.2	56.1	K		9.5	32.8	36.1		
9.5	16.4	37.9			9.4	47.5	6.4			9.4	45 2.8	47.5			9.3	52.9	1.2			9.5	34.3	58.3		
9.5	18.0	28.0			6.9	36 9.8	42.6	*Kb*		9.5	21.4	3.8			9.2	53 1.2	35.7			8.4	42.6	47.5		
9.5	19.0	22.0			9.5	33.6	6.2			9.5	27.3	19.9			3.9	3.3	52.7	K		9.5	47.2	11.0		
9.5	27.5	43.5			9.4	36.9	13.1			9.3	35.9	34.4			9.0	9.7	56.0	K		6.8	58.0	12.6	K	
9.4	37.3	38.8	K		9.4	37 4.7	0.5			9.4	40.7	56.3			9.4	18.6	6.4			9.5	58.6	53.8		
9.5	41.7	24.6			9.2	38 5.5	6.0			9.2	41.9	27.0			8.2	21.0	42.9	P		9.5	2 3.2	6.8		
9.5	47.0	11.5	*a*		9.1	9.6	16.6	*ab*		7.0	42.7	21.8	S		9.2	27.4	33.2	R		9.5	16.6	11.7		
	+	+				+	+				+	+				+	+				+	+		
10pr.	*27.28*	*0.28*			*10pr.*	*27.29*	*0.44*			*10pr.*	*27.32*	*0.61*			*10pr.*	*27.34*	*0.71*			*10pr.*	*27.37*	*0.83*		

m	3801—3860 19ʰ	+14°		m	3861—3920 19ʰ	+14°		m	3921—3980 19ʰ	+14°		m	3981—4040 19ʰ	+14°		m	4041—4100 19ʰ	+14°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′ ″	′	
9.4	2 19.7	20.5		9.1	11 16.5	3.1		8.6	20 52.5	16.0	K	9.4	31 2.5	2.1		9.5	40 56.5	39.5	
7.2	22.1	32.8	K	7.8	44.6	12.4	K	9.5	21 1.0	0.9		9.4	11.8	49.1		9.4	41 9.5	6.5	
9.4	40.5	53.5		9.5	12 13.0	4.0		9.5	7.2	51.4		9.4	13.2	1.7		9.4	9.5	12.2	
9.4	46.5	57.2		9.5	34.1	34.4		9.4	12.6	19.6		9.4	30.5	2.3		9.4	12.0	0.6	
9.2	48.1	36 2	K	8.5	49.7	1 9	K	9.2	15.2	55.8		9.4	42.9	3.8	*B*	9.5	13.9	59.9	
9.2	50.3	57.7		9.5	53.1	49.2		9.5	35.4	42.5		8.7	45.7	23.7	K	9.2	58.9	2.5	
8.8	57.1	30.4	B	9.5	54.6	43.2		9.4	35.5	50.0		9.5	32 2.8	8.7		9.5	42 0.0	7.6	*a*
9.3	3 0.7	32.4	K	9.5	13 0.0	17.4		9.5	40.2	56.9		9.5	12.4	3.4		7.7	1.2	41.6	K
9.1	6.0	51.8	R	9.5	2.0	17.7		9.3	53.4	11.8		9.1	43.4	23.1	*b*	9.2	8.9	2.2	
9.5	14.1	35.0		9.4	4.8	18.9		9.5	54.3	0.1		9.2	33 0.3	32.8		9.4	8.9	23.6	
9 0	19.2	44.1		9.5	8.6	22.6		8.7	22 20.3	56.9	*B*	9.3	6.5	52.9		8.7	33.8	6.8	
9.5	20.3	4.1		8.5	11.7	25.8		9.5	21.5	34.4		9.4	8.4	20.4		7.7	36.3	45.9	K
9.5	37.0	5.9		9.5	22.2	48.1		8.2	21.6	11.4	L	9.3	20.3	4.1		7.8	37.5	50.8	K
9.3	4 0.7	13.8		9.1	25.6	2.8		9.5	21.7	46.2		9.3	24.2	5.1		9.1	38.3	50.2	*a*
9.4	20.3	13.9		8.5	27.5	22.5		8.3	23.4	16.3		9.5	27.0	8.1		9.2	43 7.6	20.5	
9.5	49.8	47.1		9.3	30.3	35.4		6.0	43.0	17.9	K	9.4	32.9	43.1		9.3	23.8	59.1	
9.2	55.1	40.7		9.5	46.9	46.6		8.0	48.5	53.4	*B*	9.5	40.0	1.9		9.4	27.9	1.7	
8.6	59.3	34.1		9.5	55.6	41.4		9.0	23 8.0	34.2	*B*	9.5	34 45.6	22.6		9.2	31.0	14.6	
9.5	5 6.7	38.1		8.8	56.5	9.2		9.5	38.8	58.1		9.5	45.6	47.6		9.5	35.1	26.8	
9.5	7.0	13.6		9.5	14 0.4	45.6		9.0	24 2.3	55.7	K*b*	9.4	58.8	33.5	*R*	9.5	35.1	55.2	
9.5	9.2	3.7		8.1	1.5	9.1	K	9.5	3.1	20.9		8.5	35 10.6	2.4		9.5	38.6	45.3	
8.2	15.5	20.9	K	9.5	17.3	19.5		9.2	9.9	46.4	K	9.1	15.3	53.5	*a*	7.7	42.9	9.0	K
9.5	39.3	17.2		9.5	32.5	10.4		9.4	22.6	49.4		9.4	18.0	19.4		9.5	46.2	26.2	
9.5	52.7	40.9		9.5	35.6	4.0		9.5	36.1	21.8		9.0	36.6	54.0		9.5	44 3.1	33.0	
9.5	54.0	56.4		9.5	39.0	38.4		9.5	51.9	28.4		9.5	41.4	35.4		8.8	11.3	10.2	K
9.3	55.3	45.2	*B*	7.8	40.0	21.7	L	9.3	25 14.5	44.7		8.4	44.8	55.8	L*b*	8.8	18.5	18.5	
9.4	6 12.6	42.1	*a*	9.5	57.1	36.6		8.0	15.8	0.6	K*b*	9.5	45.6	23.0		8.2	24.8	48.3	L
9.5	25.5	38.6		9.1	15 6.4	5.6	S*b*	7.1	16.0	39.5	K	9.4	57.2	1.0	*a*	9.3	26.4	52.3	
8.5	39.3	48.1	K	9.4	10.0	43.7		9.1	18.1	30 8	K	9.1	36 1.0	5.0		9.5	26.5	0.8	
7.5	41.2	41.9	K	7.8	10.4	16.5	L	9.0	19.1	6.0		9.5	4.1	25.6		9.2	32.0	47.2	
7.5	44.9	22.5	K	9.4	41.6	29.9		9.5	26.4	30.4		9.5	8.1	19.5		9.2	37.4	8.2	
9.5	53.8	52.5		7.7	53.5	47.0	L	9.4	33.9	7.3		9.2	13.7	33.9		9.1	46.0	48.5	
9.5	7 1.6	56.4		9.4	58.7	16.3		9.5	41.5	55.6		9.5	34.2	8.9		9.5	45 12.5	9.3	
9.5	5.8	35.0		8.9	16 6.9	52.5		9.5	26 36.9	25.0		9.2	43.5	14.9		7.3	30.4	57.5	K
9.5	21.6	7.9	*K*	9.1	24.0	2.0	*b*	9.5	38.4	9.0		9.4	45.6	31.6		9.5	36.6	6.7	
9.5	26.1	2.0		6.5	31.0	39.3	K	9.5	27 7.8	56.4		9.4	58.5	7.9		8.7	52.3	34.1	K
9.1	35.7	8.6		8.2	43.4	26.1	K	9.5	14.0	21.9		9.2	37 1.9	34.8	*a*	9.5	57.6	13.6	
9.2	45.8	17.3		9.0	47.1	56.5		8.4	16.3	23.8	K	8.7	9.8	34.8	*b*	8.9	46 11.8	2.6	
9.3	46.2	11.8		9.2	17 0.2	39.5		9.5	25.6	17.7	*B*	9.1	29.5	6.7		8.7	12.4	14.3	K
9.5	55.8	57.9		8.5	12.8	34.7	K	9.5	29.5	50.5		9.5	39.6	18.6		9.5	54.6	17.0	
9.3	56.7	40.6	*aR*	9.2	19.7	47.6		9.5	37.2	36.9		9.5	45.4	55.8		9.3	47 2.9	24.6	
9.5	8 12.1	59.7		9.2	20.1	50.9		9.5	28 5.4	43.8		9.5	48.8	5.1		9.1	10.8	9.7	
8.8	12.9	39.7	K	8.9	21.4	32.4	K	9.4	10.6	18.2		9.5	56.9	55.5		6.5	22.9	55.0	L
8.7	21.8	25.4		9.5	34.3	51.9		9.4	11.3	1.0		9.5	38 12.4	33.4		9.3	27.5	20.5	
8.2	37.0	50.2	K	9.5	53.2	38.7		8.2	34.5	9.9	*B*	9.5	33.0	48.9		9.4	28.7	39.2	
6.1	41.5	50.2	K	9.5	18 18.8	11.2		9.4	44.1	35.0		9.4	34.6	40.3		9.3	31.4	27.0	
9.3	44.0	3.4		9.5	44.7	3.8		8.4	29 0.2	42.6	K	9.5	43.9	16.4		9.5	33.8	41.4	
9.5	9 9.4	6.8		9.5	44.9	48.3		8.4	19.4	30.4	K	9.4	58.2	50.5		9.5	53.3	53.8	
8.2	13.2	58.2	K	8.9	19 7.1	10.2	L	9.3	24.1	18.8		9.4	59.5	55.2		9.5	48 1 6	42.5	
9.5	37.0	37.1		9.4	7.9	46.0		7.7	25.1	11.6	*B*	9.5	39 23.7	29.9		8.6	24.1	35.6	L
9.5	40.3	7.2		8.0	10.2	19.3	*B*	9.5	29.4	56.8		8.3	32.5	23.1		9.3	24.8	57.3	
5.9	48.7	17.2	L	9.2	45.0	36.6		8.9	30.3	43.6	K	9.5	57.2	49.7		8.7	31.2	55.2	
9.4	50.6	8.3		9.5	48.1	2.0		9.5	35.0	28.8		8.5	57.9	6.7		9.2	45.8	28.9	
8.7	55.4	22.1	K	9.2	50.1	22.1		6.5	35.7	4.3	*B*	9.5	40 8.2	48.9		9.4	46.6	4.4	
9.5	10 14.6	56.5		9.5	20 4.0	31.1		8.9	30 17.4	9.9	K	8.9	21.6	54.7	K	9.4	49 12.6	55.6	
9.5	18.9	45.5		9.3	10.5	3.1		9.5	31.5	4.2		9.2	26.0	48.2	K	7.0	19.7	40.1	K
9.5	36.7	15.6		9.0	18.1	48.9	K*b*	9.5	34.4	2.7		9.5	29.7	21.4		9.5	22.5	6.0	
9.2	11 1.5	1.5		9.5	29.3	27.5		8.3	40.4	55.7	*B*	9.2	31.8	13.5	K	9.5	24.4	1.5	
9.0	5.9	2.2	*B*	9.3	37.3	33.2		9.5	46.3	47.1		9.1	39.9	17.3	K	9.4	41.5	17.9	
9.5	9.0	48.4		9.5	43.3	25.7		9.5	46.9	7.6		9.5	54.3	34.0		9.3	51.2	39.4	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	*27.41*	*0.96*		*10pr.*	*27.45*	*1.08*		*10pr.*	*27.50*	*1.22*		*10pr.*	*27.57*	*1.36*		*10pr.*	*27.62*	*1.47*	

4101—4160

	19ᵐ	+14°	
m	s ′ ″	′	
9.3	50 0.0	29.7	
9.3	2.1	9.1	
9.5	8.6	41.4	
9.1	11.7	25.6	*b*
9.5	29.6	0.0	
9.3	30.2	43.3	
9.5	31.9	58.0	
9.2	38.3	13.5	B
9.5	46.0	16.9	
9.5	58.6	21.9	
9.1	51 1.6	44.9	
9.1	3.4	10.3	K
8.7	25.9	42.9	B
9.5	29.4	15.8	
9.2	37.0	25.1	B
9.2	53.8	25.7	B
9.5	52 6.1	4.4	
9.5	17.9	22.2	
9.5	31.7	59.7	
8.6	33.4	46.6	
9.5	54.3	33.8	
9.4	53 0.6	1.5	
9.5	26.2	2.1	
9.5	31.6	35.9	
8.2	32.0	30.5	K
9.2	43.1	22.5	
8.5	51.6	25.5	K
8.4	58.6	21.5	K
9.0	58.6	11.5	
9.5	54 5.7	5.3	
9.3	18.7	6.8	B
7.0	25.6	8.8	L
6.7	27.1	25.6	K
7.5	29.9	49.3	L
9.4	32.3	53.8	
9.0	35.1	33.5	
9.1	36.4	37.8	
9.2	37.1	9.3	
9.1	37.2	38.4	
8.5	42.0	0.0	B
9.5	47.0	2.9	
9.5	48.8	27.2	B
9.5	49 3	56.1	
8.5	53.6	33.6	K
9.3	55 6.9	57.2	*a*
9.3	33.8	56.8	K
9.3	34.9	53.1	
9.0	48.1	50.0	
7.5	58.9	57.9	K
6.5	56 4.6	9.1	L
9.0	4.6	23.9	
9.0	5.1	20.5	
8.7	21.5	53.1	B
9.5	30.6	54.6	
8.9	35.8	40.9	
9.4	36.9	32.2	
8.8	57 4.6	11.8	
7.0	9.3	34.9	K
9.5	14.6	0.9	
9.2	19.4	59.0	
	+	+	
10pr.	27.69	1.69	

4161—4220

	19ᵐ—20ᵐ	+14°	
m	s ′ ″	′	
8.3	57 20.1	40.1	K
9.1	27.1	58.6	
9.5	59.0	16.7	
9.5	59.7	22.4	
9.4	58 10.6	4.0	
9.5	20.9	22.8	
9.3	29 0	23.4	
9.4	55.0	28.7	
9.3	55.5	59.0	*a*
9.4	59 0.3	22.0	
8.9	7.1	59.9	K
9.5	7.3	28.7	
8.8	19.6	49.7	K*b*
9.0	28.1	48.3	
9.3	47.6	8.7	
9.5	58.4	51.0	
9.3	0 18.4	48.5	
9.5	28.3	48.5	
8.0	28.4	52.0	K
9.5	30.3	53.0	
9.3	33.1	45.6	
9.1	37.1	38.5	*a*
9.4	37.5	5.8	B
9.5	39.6	49.3	
9.4	45.2	6.6	
9.5	48.4	2.1	
9.2	48.6	41.5	
8.9	1 12.4	45.5	K
9.5	18.4	2.2	
9.3	27.6	47.5	
9.5	28.1	56.2	
9.5	46.6	17.0	
9.2	52.6	10.2	*R*
9.5	55.7	3.0	
9.0	59.3	37.6	K
9.1	2 1.0	13.9	*R*
9.1	2.1	29.1	
9.5	15.1	42.5	
8.8	21.8	54.9	K
9.5	24.1	24.8	
9.5	51.1	47.8	
9.0	58.6	19.4	K
9.3	3 2.0	50.0	B
9.4	15.6	55.8	
9.3	22.9	6.0	
9.2	39.3	33.4	
9.2	39.8	10.5	
9.5	40.6	15.2	
7.5	48.1	7.4	K
8.5	4 3.1	29.3	
8.0	4.3	47.2	L
9.4	27.4	22.9	
8.6	37.1	37.3	
8.0	52.2	0.1	K
7.1	54.6	13.3	B
9.5	5 1.7	35.8	
9.0	7.1	43.1	
9.5	20.6	45.9	
7.3	22.9	56.5	L
8.3	29.1	19.0	
	+	+	
10pr.	27.74	1.69	

4221—4280

	20ᵐ	+14°	
m	s ′ ″	′	
9.0	5 33.1	56.9	
9.3	37.1	13.5	
8.3	6 5.6	54.7	L*b*
9.5	7 0.1	25.5	
8.8	7.8	13.9	
9.3	9.6	32.7	
5.0	33.5	45.5	L*b*
9.5	37.2	12.9	B
9.2	37.7	23.5	B
9.3	37.8	39.3	
9.2	42.2	42.2	
9.3	43.0	35.7	
8.9	47.8	3.2	B
9.5	8 0.5	43.9	*a*
9.4	4.3	56.4	
9.3	12.1	23.9	
9.0	20.6	46.4	K
9.5	23.7	6.7	
9.5	49.5	1.2	
8.5	52.0	59.7	K*b*
9.5	9 2.7	27.1	
7.7	4.2	52.5	K
9.5	24.2	25.0	
9.5	29.5	6.5	
9.5	43.7	26.8	
9.5	46.7	20.9	
9.2	54.5	49.8	
9.5	10 2.2	46.3	
8.9	39.2	22.3	K
9.5	50.7	9.7	
9.1	11 10.0	41.2	K
9.4	17.2	22.0	
9.0	22.1	49.7	K
9.4	23.2	39.7	B
8.5	28.7	44.0	K
8.9	12 26.7	9.2	K
9.2	44.7	25.3	
9.5	48.3	40.2	B
8.5	48.7	13.9	K
8.8	56.2	53.5	
9.5	13 2.6	2.8	
8.8	29.7	49.4	
6.7	35.5	7.9	K
9.0	59.2	28.8	
9.4	14 9.2	56.6	
8.8	14.5	8.8	
9.1	27.6	6.0	*a*
6.5	32.7	39.7	K
8.8	48.5	54.0	K*b*
8.8	53.0	57.6	K
9.2	15 6.2	5.5	
8.5	35.7	28.1	K
9.2	39.2	15.5	
9.5	59.2	15.5	
5.8	16 6.8	4.8	K
8.9	9.2	46.3	
9.4	20.7	30.6	
7.0	36.8	55.1	*B*
9.3	17 16.7	27.0	*R*
9.2	22.2	41.1	
	+	+	
10pr.	27.82	1.82	

4281—4340

	20ᵐ	+14°	
m	s ′ ″	′	
9.5	17 25.8	0.6	
9.2	35.4	46.8	B
8.7	49.2	48.1	
8.8	18 4.3	24.2	B
9.3	8.7	7.2	
9.3	12.1	21.6	*a*
9.4	29.6	2.1	
9.5	33.7	27.8	
8.4	35.9	21.6	B
9.5	41.7	33.0	B
9.3	49.2	59.3	
9.2	19 11.7	27.1	B
7.3	15.4	28.8	L
9.5	43.7	38.9	
9.2	44.8	5.9	
9.3	20 12.0	34.6	
9.5	12.2	41.8	
8.8	13.2	24.0	K
9.5	16.1	0.0	
9.1	30.2	33.9	
9.4	37.1	45.2	*a*
9.0	45.8	44.2	B
9.0	46.7	25.7	K
8.0	21 6.1	28.8	K
9.5	21.4	29.4	
9.5	22.3	22.2	
9.5	38.1	3.0	
9.2	39.2	13.3	K*b*
9.5	22 0.1	27.0	
9.5	1.5	13.7	
9.4	7.6	49.5	*R*
9.5	41.3	41.7	
8.8	43.8	33.1	K
9.1	54.7	41.7	*R*
9.2	23 12.7	14.1	
9.1	16.1	3.4	*a*
8.8	23.2	30.6	K
9.2	26.1	5.1	*a*
9.0	31.4	4.7	B
8.7	32.0	36.0	K
9.5	37.7	27.1	
9.5	41.5	23.3	
8.5	50.2	5.8	L
9.4	24 1.4	13.5	B
8.8	4.7	58.4	K*b*
9.4	8.7	39.1	
9.4	9.6	23.1	
9.5	14.7	55.5	
9.4	36.4	5.3	B
9.4	42.9	25.4	
8.4	50.0	13.3	
9.5	25 9.2	3.4	
9.5	9.9	47.9	
8.6	11.3	13.4	
7.9	22.3	41.6	K
8.8	26.3	44.2	K
9.4	40.6	54.6	
9.4	26 12.9	30.3	B
9.4	28.1	42.4	
9.0	36.6	55.2	B
	+	+	
10pr.	27.91	1.95	

4341—4400

	20ᵐ	+14°	
m	s ′ ″	′	
8.4	26 57.0	43.9	K
9.5	27 1.1	52.5	*a*
8.2	11.8	13.3	L
9.2	16.2	43.5	
8.5	19.4	51.6	K
9.2	37.7	10.3	
9.5	53.0	6.7	
9.2	54.0	54.7	K*b*
9.0	58.4	21.3	
9.5	28 5.3	20.5	
9.5	6.7	33.0	
8.5	19.2	54.7	K
4.5	31.2	12.0	L*b*
9.5	54.0	53.3	B
8.0	57.8	52.6	K
9.5	29 22.2	17.4	
9.5	36.0	29.8	
9.0	46.1	48.4	
8.5	49.7	7.4	L
8.7	51.7	53.3	K
9.1	55.8	4.0	
8.3	59.6	13.1	K
8.7	30 1.7	13.8	K
8.3	3.0	13.6	S
9.1	7.9	21.9	
9.4	9.2	2.3	
8.0	17.2	19.9	L
9.0	41.7	15.4	
3.5	45.0	5.2	K
9.5	31 11.7	48.3	
8.9	56.4	38.7	K
9.5	58.2	49.7	
9.3	32 4.3	36.7	
8.5	5.2	31.9	K
8.8	12.5	2.1	
9.5	23.3	31.1	B
8.8	27.5	58.2	K
9.3	30.7	59.7	
8.8	31.2	12.0	
9.4	43.7	13.4	
9.1	52.8	27.0	B
9.4	33 3.8	17.2	B
9.3	8.7	34.0	
9.3	30.8	0.1	
9.4	42.3	21.5	
9.4	43.3	12.6	
9.2	45.2	48.4	
9.0	49.7	15.7	
7.5	55.1	1.1	L
9.5	34 20.5	36.4	
8.7	22.3	13.6	
8.5	24.0	54.9	K
6.0	27.6	5.6	L*b*
9.5	43.7	39.8	
8.3	46.7	51.9	K
9.4	55.0	56.7	
9.4	55.2	48.5	
9.4	35 57.2	34.6	K
9.4	36 5.2	6.4	B
9.5	9.7	43.6	
	+	+	
10pr.	27.99	2.05	

4401—4480

m	20h	+14°	
9.3	36′ 10.8″	35.4	
8.4	34.7	42.2	K
4.2	42.7	34.6	K
9.5	53.5	53.3	
8.8	54.2	43.6	
9.5	37 17.5	58.1	
9.0	20.7	15.4	
9.1	24.2	18.8	
9.0	38 6.2	43.2	
9.2	7.2	34.2	
9.5	39.7	17.8	
9.1	39 12.5	30.6	B
8.5	24.7	49.0	K
9.0	33.0	52.4	K
9.5	43.7	59.1	
9.2	47.8	35.0	K
9.5	50.2	52.1	
9.2	55.6	36.1	*a*
7.3	40 17.2	12.2	B
8.8	38.5	27.5	K
9.5	39.2	37.8	
8.9	41 25.7	12.6	
8.1	29.7	56.3	Kb
9.5	31.2	36.7	
9.5	31.7	53.5	
9.5	40.6	15.9	B
8.8	42 1.0	29.1	
9.4	4.6	56 9	B
9.0	9.7	7.5	
8.9	10.1	38.7	B
9.0	12.3	44.2	
9.3	12.8	47.1	
6.8	26.8	5.2	L
9.0	31.0	54.9	
9.3	39.2	28.8	
9.3	53.7	32.2	
9.3	56.9	45.1	B
9.5	43 4.9	47.8	
9.0	21.5	48.7	K
9.0	22.7	13.7	
9.5	35.1	3.1	
9.4	43.3	54.2	
9.0	44 7.2	3.4	
9.5	8.2	14.4	
9.5	12.2	47.4	
8.5	14.3	10.2	K
9.2	16.7	40.8	
9.2	21.2	32.2	
8.9	32.2	13.7	K
9.3	43.5	2.5	
9.0	58.2	46.0	
9.5	45 5.2	9.2	
9.5	17.4	21.8	
9.5	19.4	26.8	
9.5	20.3	16.5	
8.7	33.7	33.6	K
8.7	35.2	30.2	K
9.0	55.2	12.0	
9.2	58.0	56.7	
9.3	46 4.6	49.6	*a*B
10pr.	+ *28.09*	+ *2.17*	

4481—4520

m	20h	+14°	
8.5	46′ 24.3″	53.1	Kb
9.5	35.1	41.6	B
9.4	36.2	40.5	
9.3	59.3	44.7	
9.0	47 5.5	49.7	B
9.5	26.2	43.2	
9.5	30.7	24.7	
9.5	32.2	13.4	
9.4	37.3	52.7	B
9.3	43.2	10.6	
9.4	48 54.7	20.0	
9.1	57.4	27.8	*b*
9.5	49 7.7	46.7	
9.2	10.2	54.8	
7.8	13.7	51.1	K
9.5	26.9	40.7	
9.4	33.1	24.0	B
7.0	35.9	16.8	K
7.2	41.4	8.5	K
9.4	45.4	24.2	B
9.5	51.8	57.8	
9.4	50 16.1	5.5	B
9.2	24.7	35 0	*a*
8.8	27.1	16.8	K
8.8	27.6	20.2	K
9.1	34.3	30.1	B
9.2	58.9	28.5	
9.1	51 10.4	45.0	
9.5	16.4	4.8	
9.4	28.8	53.7	B
8.6	41.4	16.5	K
9.5	47.9	30.6	
7.5	50.9	22.9	K
8.8	53.4	34.7	
9.5	52 5.9	16.9	
9.4	6.9	9.8	
9.1	13.7	4.7	B
9.5	16.3	44.6	B
9.4	26.4	59.6	*a*B
9.0	40.4	41.0	
9.5	40.6	3.9	
9.5	51.7	4.8	
9.2	53.9	30.6	
9.0	53 19.3	53.9	
9.5	57.7	34.8	
9.2	54 0.7	2.4	K
8.5	4.2	30.2	
9.2	10.0	12.7	K
9.4	19.2	49.0	
9.3	23.2	36.4	B
9.4	26.3	6.2	K
8.4	28.8	57.4	Lb
9.5	46.7	38.7	B
9.5	55 8.3	0.6	*a*
8.9	9.4	1.7	
9.0	20.0	55.1	K
9.5	47.3	40.7	
7.3	56 12.1	10.0	L
9.0	16.1	0.6	
9.0	37.2	47.2	K
10pr.	+ *28.19*	+ *2.28*	

4521—4580

m	20h—21h	+14°	
9.5	56′ 50.5″	33.2	*B*
9.1	51.3	56.3	Kb
9.5	52.0	59.3	
9.5	58.7	22.5	
9.1	57 25.1	9.4	K
9.5	29.6	57.4	
9.5	58 22.8	8.0	
9.2	25.2	26.4	K
9.4	41.9	8.2	
7.0	59 0.6	45.7	L
9.2	36.2	32.3	*R*
9.3	44.1	13.8	
9.5	45.2	55.0	
9.3	51.1	5.8	B
9.5	56.2	49.7	
9.5	0 15.2	3.9	
8.4	21.6	49.3	L
8.8	27.7	18.3	
9.2	30.7	37.3	B
9.5	32.8	30.6	B
9.5	35.1	31.3	*B*
9.2	39.3	35.1	*B*
9.5	51.6	47.9	
7.7	1 7.8	5.4	K
9.5	9.6	38.8	
8.5	20.0	40.9	K
9.5	2 27.9	19.9	
9.5	3 29.6	33.6	
9.4	34.4	39.0	B
8.2	40.6	39.4	K
9.5	4 0.7	27.5	
8.9	6.7	50.8	K
9.4	11.0	52.0	*a*B
8.0	5 13.4	7.3	K
9.5	48.2	44.8	
8.1	6 3.5	58.6	Kb
9.3	33.2	55.8	*B*
9.5	34.1	24.0	
9.3	39.8	5.8	
9.5	55.4	24.0	
9.5	56.6	39.0	
9.5	7 15.6	23.7	
9.5	17.9	16.0	
9.4	21.3	56.8	
9.5	35.4	27.4	
9.3	8 1.7	48.3	
9.4	10.3	31.9	B
9.3	17.6	31.4	
9.4	19.1	44.9	*a*
9.5	24.0	9.6	
8.5	56.6	44.1	L
9.5	59.4	48.0	
9.2	9 22.6	35.0	
9.5	40.6	51.7	B
9.0	41.7	27.8	
9.2	49.6	22.5	
9.5	10 35.4	4.8	
9.5	52.0	8.5	
9.5	11 39.6	55.9	
9.5	51.1	47.6	
10pr.	+ *28.31*	+ *2.40*	

4581—4640

m	21h	+14°	
9.5	11′ 52.7″	21.2	
8.5	54.7	38.3	K
9.2	58.6	24.3	
9.4	12 30.7	25.0	*B*
*9.2	45.7	49.4	K
9.4	46.0	25.2	B
9.4	13 39.2	37.9	
8.5	44.1	19.4	K
9.1	14 5.6	18.4	
9.1	17.6	42.9	*a*B
9.4	19.2	20.5	
9.4	26.0	42.8	B
9.5	27.4	42.2	
8.9	41.7	36.8	K
9.5	15 12.1	23.7	
9.3	23.3	39.7	*a*B
8.7	25.7	4.4	K
9.4	47.6	28.1	
9.2	48.6	56.5	
9.0	16 3.1	42.4	K
9.1	4.6	23.2	
9.5	14.6	11.6	
9.5	28.1	42.2	
9.0	48.1	38.5	K
9.0	49.6	11.4	K
9.3	18 11.8	17.6	B
8.3	35.3	54.7	K
9.1	49.8	5.7	*b*
6.8	55.8	59.3	K
9.5	20 7.1	23.2	
*9.5	14.2	46.1	
8.7	21 19.1	59.8	B
9.5	22 10.7	12.5	*a*
9.5	21.1	13.1	
9.5	32.9	4.1	
9.5	23 10.4	5.0	
8.5	13.6	23.9	K
8.7	26.7	13.5	K
9.5	24 40.6	26.0	
9.5	56.6	15.6	
9.5	25 26.4	1.6	
9.0	27.5	11.8	
9.4	40.1	28.1	
9.2	57 0	16.1	*a*B
9.0	26 1.1	1.6	K
9.4	39.7	48.7	*a*B
8.7	46.0	56.0	K
9.3	50.6	53.9	B
9.5	57.2	13.1	
9.0	27 10.2	58.2	K
9.4	17.5	58.8	*a*
9.5	23.1	45.5	
9.2	31.1	2.4	*B*
9.4	36.6	45.5	K
8.5	28 17.8	48.6	Kb
9.2	37.6	11.1	
6.5	29 12.6	26.7	L
9.0	14.7	37.8	
9.0	28.1	51.1	
9.5	42.2	28.5	
10pr.	+ *28.50*	+ *2.56*	

4641—4700

m	21h	+14°	
8.4	29′ 45.2″	15.6	K
9.5	30 9.2	13.1	
9.5	14.4	35.4	
9.0	23.6	33.7	
9.4	33.4	12.0	
9.3	37.4	12.4	B
7.0	48.6	35.3	K
8.0	51.6	24.6	K
9.0	31 8.1	48.9	
9.5	40.6	29.9	
9.5	32 18.2	52.1	
9.5	21.7	6.8	
9.3	56.3	41.8	B
9.4	59.6	41.3	
9.5	33 17.2	26.7	
9.4	34 12.2	59.9	
9.5	38.0	13.9	
8.5	42.3	0.6	K
8.0	46.1	23.5	K
9.5	48.2	41.0	
9.5	54.9	5.1	
9.5	35 7.1	48.0	
8.9	29.2	51.5	
9.2	36.9	43.8	B
9.5	36 9.6	24.9	B
9.5	26.4	3.4	
9.5	37 2.7	20.5	
6.5	33.7	7.4	K
9.4	40.0	55.3	
9.5	38 5.8	38.0	
9.2	17.5	15.0	K
9.2	39 11.1	26.7	*R*
9.5	34.2	29.9	
9.5	58.1	31.6	
9.4	41 53.6	20.8	
9.0	42 14.1	44.5	*B*
9.0	16.6	26.7	
9.2	18.1	9.7	
8.4	47.7	55.9	K
9.5	43 6.2	14.6	
9.5	45.6	42.4	
9.5	47.1	59.0	
9.0	52.6	27.7	K
8.8	54.6	34.1	K
8.8	44 25.6	37.1	*B*
9.5	27.2	11.8	
8.9	36.1	30.9	Kb
9.3	45 0.6	29.7	K
9.2	32.0	50.1	
9.5	47 15.7	54.0	
9.0	48.8	51.9	
8.0	55.8	32.4	Lb
9.3	48 20.4	27.4	
9.5	41.3	29.0	
9.5	44.8	34.6	
9.5	51.3	16.9	
9.0	54.9	55.3	
9.3	49 5.3	11.2	Bb
9.4	6.3	2.6	*B*
9.5	13.8	22.4	
10pr.	+ *28.72*	+ *2.72*	

4584a				
9.5	*12*	*32.7*	*59.8*	*a*
4611a				
9.5	*20*	*47.6*	*41.6*	

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	21ˢ—22ˢ		+14°			22ˢ		+14°			22ˢ		+14°			22ˢ—23ˢ		+14°			23ˢ		+14°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	49	34.8	26.2	R	9.0	8	3.8	43.9	K	9.2	27	41.9	40.4		9.3	45	14.2	20.4		9.5	4	39.5	9.7	
9.5	50	56.9	21.0		9.5		13.3	58.6		9.1		44.6	30.7		9.5		31.3	0.7		9.0		51.6	33.9	K
9.5	51	2.0	1.6		8.8		27.2	2.8		8.8		44.6	46.2	K	9.5		42.1	35.5		9.2	5	1.0	21.5	R
9.4		33.4	58.5		8.5		47.8	43.2	K	9.4		50.6	57.7		9.5		53.8	16.9		9.5		12.4	27.8	
7.7		36.0	37.0	L	9.5	9	12.9	50.0		8.9	29	0.2	4 9	K	9.5	46	14.3	45.6		9.5		41.9	2.7	
8.0		48.3	22.1	K	7.5	10	13.9	19.7	L	9.5		0.6	20.4		8.3		14.6	58.6	Kb	9.5		49.8	52.0	
9.2	52	0.2	37.2	B	9.3		28.5	52.4		9.5		35.3	53.9		9.5		45.8	27.5		9.1	6	17.2	50.7	
9.5		10.8	11.6		8.7		35.8	59.0	Kb	9.2		40.4	19.6		9.5		50.4	9.7		9.4		20.5	23.5	
8.8		27.8	42.5		9.5	11	13.1	30.4		9.0		55.8	49.0		9.5		54.9	24.0	*a*	9.0		23.5	33.5	R
8.2		32.3	58.7	L	9.3		53.1	54.1		9.4	30	14.9	26.3		9.5	47	18.5	33.8		9.2		28.6	44.8	
9.5	53	17.8	41.1		9.5		58.1	45.6		9.5		20.3	59.9		9.3		33.3	6.5		9.5		31.6	53.8	
8.5		43.3	11.2	*B*	7.0	12	21.6	49.5	*B*	9.2		25.7	52.6		9.0		39.7	25.8		7.4		35.6	35.1	Lb
7.9		55.3	35.2	L	9.5		30.3	11.4		9.5		29.3	42.8		8.5		40.7	20.0	K	8.6	7	19.6	26.0	R
8.9	54	1 8	29.3	*B*	9.2		32.2	2.8		7.8		45.1	14.8	L	8.8		41.7	35.2		9.5		29.6	15.4	
9.5		10.8	54.6		9.0		55.8	5.6		9.1		59.8	12.4	*K*	9.0		56.6	53.2		9.5		32.0	9.2	
9.5		57.4	5.2		8.8	13	10.3	21.4	K	8.7	32	4.6	40.0		9.5	48	11.2	9.0		9.3		48.5	28.6	
9.0	55	6.0	46.4	B	9.5		30.9	1.7		8.5		4.9	35.1		9.5		16.2	48.3		9.4	8	15.3	33.7	
9.1		7.0	42.3	B	9.5		45.3	25.6		9.3		48.3	37.0		9.5		41.5	14.1		9.2		24.2	57.0	*b*
9.5		13.8	39.0		9.5		45.8	45.0		8.5	33	3.8	15.9		9.5		59.7	13.4		9.2		27.4	13.0	K
9.4		16.9	2.5		9.5		46.6	55.3		9.0		24.9	43.1		9.5	49	52.9	15.3		9.3		33.5	37.5	
9.5		56.3	25.1		9.5	14	14.2	1.5		9.0		26.3	32.1		9.5		57.2	44.2		8.5		33.7	18.0	K
9.3	56	6.9	50.0		8.0		24.4	11.0	K	9.4		34.2	0.0		8.0	50	2.2	38.7	*B*	9.5	9	4.5	5.1	
9.5		7.3	39.7		9.5		28.3	41.8		9.4		40.8	9.5		9.1		7.3	30.7		9.3		54.0	8.3	
9.1		17.9	7.3		9.2		29.1	23.2		9.5		59.4	14.2		9.0		48.2	15.1		9.4	10	39.7	2.7	
9.5		21.3	56.0		9.2		45.4	30.7	K	7.5	34	0.1	44.5	L	8.7		56.0	29.7		9.5		42.3	32.6	
9.5		26.8	50.1		7.0	15	3.2	55.2	K	9.3		23.8	5.8		9.5	51	54.3	47.7		8.5		44.0	39.6	K
9.0	57	39.1	55.3		9.5	16	9.7	49.5		9.5		24.6	34.8		9.5	52	4.2	17.2		8.2		55.6	48.9	R
9.3		48.0	42.8	B	9.3		50.3	27.6		9.4		43.5	21.1		9.5		33.7	11.6		9.3	11	40.7	28.8	B
9.5	58	2.4	40.0		9.3		54.8	55.9		9.4		46.2	48.3		9.5		51.1	39.6		9.5		41.5	35.2	
6.6		3.3	6.9	K	7.0		57.6	32.5	Kb	9.5		50.8	33.2		9.0	53	19.8	9.5	R	9.5		43.7	0.1	*a*
9.4		7.0	35.9	B	9.5	17	7.1	24.2		8.5		51.5	28.0	R	8.8		36.7	49 4		9.0		46.5	0.9	R
9.1		51.0	5.3	K	8.4		24.7	9.7	K	9.5	35	20.8	11.4		8.3		40.2	53.4	Kb	9.5		58.0	21.3	
9.2	59	0.9	37.7		9.4		50.8	49.7		8.2		53.1	0.0	K	9.5		44.5	36.6		9.5	12	13.6	28.2	
8.3		5.1	18.0	Kb	9.5	18	10.8	26.3		9.5	36	19.7	59.0		9.5		45.7	19.0		7.5	13	29.6	16.0	K
8.3		11.2	9.7	K	9.5		28.4	53.7		9.5		40.8	53.7		9.5	54	7.2	14.8		9.5	14	19.9	13.0	
9.4		25.8	4.2		9.5	19	12.2	26.7		9.5		49.3	27.2		7.3		11.4	6.5	K	9.5		23.9	23.5	
9.5		38.4	46.0		9.4		16.5	0.0		9.3		52.7	19.6		9.3		12.3	56.3		9.3		36.4	29.9	
9.5	0	48.2	7.3		9.0		42.8	5.8		9.5	37	16.8	3.9		9.5		30.5	36.6		9.5	15	6.9	53.2	
9.5	1	0.6	41.9		9.5		43.6	13.5		9.0		35.2	18.3		9.0		39.8	39.0		8.5		32.0	35.5	K
9.4		2.8	24.2		9.0	20	2.4	22.9		9.5		41.3	26.2		9.2		48.5	1.3	K	9.2		58.2	29.6	
8.8		25.4	20.4	K	8.5		6.9	23.9	K	9.5		53.8	50.0		9.1	55	6.2	35.9		9.5		59.9	24.0	
9.1		58.4	55.9	*b*	9.4		12.9	34.2		9.2		59.5	22.7		9.3		6.8	25.2		9.5	16	3.1	31.4	
9.5	2	6.9	16.4		9.2		45.3	54.3	*b*	9.0	38	31.6	57.5		9.5		35.7	40.4		9.5		7.3	1.7	
9.2	3	10.8	0.3	K	9.5	21	10.4	43.2		9.4		54.0	49.7		9.0		39.7	29.6	R	9.5		37.5	52.3	
9.5		40.8	41.1		9.5	22	10.3	44.5		9.5	39	28.7	49.7		9.4	56	59.1	31.8		9.5		46.7	43.6	
8.0		50.1	59.8	*B*	8.6		19.2	9.7	Rb	7.5		36.7	14.1	K	2.0	57	33.7	27.0	K	9.0		50.0	33.2	K
9.5		59.6	59.6		9.4		44.3	19.0		8.8		42.8	26.8	K	9.3		40.2	16.2		9.5	17	27.0	46.5	
9.2	4	30.8	23.4	R	9.2		59.3	53.5		8.3		55.8	7.1	K	9.5		54.7	30.1		9.3	18	3.7	55.2	
9.2		33.6	30.4		9.5	23	10.9	32.8		9.5	40	0.0	2.0		7.6	58	21.3	10.3	K	9.5		53	1.5	
9.3	5	19.7	9.0		9.3		23.4	21.0		9.3		1.3	0.7		9.5	59	24.0	19.9		8.0		8.0	53.9	K
9.1		31.4	34.2		8.3	24	4.4	42.8	Kb	9.5	41	5.5	59.7		9.2		44.0	10.8		9.5		20.0	30.2	
9.5		43.8	37.0		9.3		23.3	52.8		9.3		6.4	0.5	K	8.9	0	5.3	28.9	Kb	9.5	19	13.0	29.5	
8.3		45.6	18.0	K	9.1	25	28.4	16.2	*b*	9.5		25.4	45.6		9.4		16.9	48.5		9.3		22.0	22.3	K
9.5		45.9	22.8		9.3		36.9	11.7		9.3		27.4	9.5		9.4		55.0	30.0		9.5		30.4	6 4	
9.5	6	17.9	20.7	R	9.2		48.6	17.0		9.4	42	2.2	43.9		9.2	1	29.6	46.2	*a*	9.5		44.0	57.1	
9.4		55.3	36.2		9.5	26	11.9	27.6		8.3		8.2	30.4	K	8.9		41.6	44.8		9.5	20	27.5	34.0	
9.4	7	26.8	3.7	*a*	9.2	27	5.3	24.9		9.2	43	35.7	22.4	*B*	9.0	2	26.0	25.7	K	9.5	21	16.4	49.7	
9.3		38.4	34.1		9.2		13.8	54.1		9.3	44	26.8	42.5		9.5		42.3	1.5		9.1		32.5	25.3	K
9.5	8	2.1	39.0		8.0		15.3	16.7	R	6.8		36.2	20.0	K	9.5	3	27.7	50.8		9.0		41.0	19.7	K
9.4		3.3	3.1	*a*	8.2		28.3	57.3	Kb	9.5		57.3	46.0		9.1		50.1	11.8		9.5	22	18.0	16.0	
		+	+				+	+				+	+				+	+				+	+	
10pr.		28.97	2.88		10pr.		29.22	3.01		10pr.		29.47	3.11		10pr.		29.73	3.20		10pr.		30.00	3.27	

5001—5020					5021—5040					5041—5060					5061—5080					5081—5100				
	23ʰ		+14°			23ʰ		+14°			23ʰ		+14°			23ʰ		+14°			23ʰ		+14°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	22	42.3	53.5		9.3	31	35.2	51.8		9.5	36	16.9	2.7		9.5	41	13.5	49.0		9.5	52	34.7	4.7	
9.3	23	2.3	1.3		9.5		39.0	25.3		9.5		53.5	51.7		9.1	42	17.0	35.4	b	8.9	53	17.2	13.5	K
9.5		57.5	49.0		9.2		45.3	58.9	K	9.1		55.0	37.9	K	9.2		32.6	53.5		9.3		28.9	21.2	
9.2	24	17.5	15.6	b	9.5		56.3	51.9		9.5	37	40.7	9 0		8.6		59.0	4.5	K	8.2	54	30.1	44.2	K
9.5		30.5	57.0		9.3	32	8.6	59.1	K	7.7		51.4	14.5	Kb	9.5	43	14.5	26.7		9.3		52.0	19.3	
8.9		55.0	10.3	R	9.2		11.4	27.7	K	9.5		58.6	51.6		9.4		25.5	12.8		9.5		58.2	19.3	
9.0	25	31.4	41.0		9.3		21.0	17.7		9.1	38	18.9	51.7	b	9.5	45	15.4	19.4		8.7	55	3.6	19.7	K
9.5	26	24.9	36.2		7.9		42.6	0.9	R	9.5		30.5	31.9		9.5		55.5	51.3		8.6		7.1	32.7	K
9.4		34.0	34.7		9.0		45.5	30.6	K	9.5		33.5	55.9		8.1	46	26.0	40.6	K	9.5		33.6	32.6	
8.9	27	54.7	14.6	Kb	9.5	33	12.5	34.1		9.2		47.5	39.5		9.5	47	22.5	13.2		9.5	56	26.1	16.7	
9.2	28	1.0	47.7		9.5		14.0	26.2		9.0		50.6	5.2	K	8.7		39.0	8.9	K	9.5		58.2	34.7	
9.5		8.0	18.1		9.3		34.2	29.5		9.5		51.0	5.8	K	9.3		52.6	7.3		8.8	57	2.0	57.5	
9.5		38.5	12.5	K	9.3		56.0	2.7		9.1		55.0	46.8	a	9.5	48	19.7	55.3		9.5		14.2	23.6	
8.5		41.3	53.7		9.4	34	7.7	28.4		8.8	39	11.9	2.5	K	7.2		29.6	25.5	K	7.3		16.4	9.0	K
8.8		52.3	6.6	K	9.0		13.3	1.7	K	8.9		27.4	43.1		8.3		39.4	2.4	Kb	9.5		28.6	21.9	
9.1	29	35.3	59.7	R	9.1		43.0	35.1	b	8.4		47.9	51.0	R	9.4	49	3.9	3.1		9.5	58	14.3	51.8	
8.9	30	8.6	27.8		9.3		44.7	11.5		8.7	40	48.5	35.0	K	7.9		51.6	49.2	K	9.5		55.9	33.5	b
9.5		26.6	53.5		9.5	35	34.5	48.3		8.5		58.5	14.9	K	9.3	50	20.9	39.6	K	9.4		59.5	3.8	
9.5		29.0	57.7		9.5		48.0	12.5		9.5	41	0.6	51.0		9.5	51	5.2	24.6		8.7	59	42.6	0.7	K
9.0	31	21.0	40.0	K	8.2		50.0	10.1	Kb	9.5		7.5	14.7	K	9.5	52	25.4	58.5	Rb	9.5		56.2	38.9	
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.24	3.31		10pr.		30.32	3.32		10pr.		30.40	3.33		10pr.		30.53	3.34		10pr.		30.67	3.34	

Zone +15°

1—20					21—40					41—60					61—80					81—100				
	0ʰ		+15°			0ʰ		+15°			0ʰ		+15°			0ʰ		+15°			0ʰ		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	0	4.2	54.2		9.3	7	31.7	7.4	K	9.2	10	49.4	38.8		9.3	20	25.8	40.4	B	9 4	26	2.5	7.8	
9.2		41.2	46.1	K	8.6		32.1	24.8	K	9.0		52.2	3.3	R	8.0		36.2	54.3	L	9.3		14.6	51.1	
9.5		48.3	9.0	b	9.3		51.8	0.0		8.7	11	13.3	10.7	K	6.0		41.7	37.7	L	9.3		29.3	51.8	
9.4	1	40.2	40.9		9.5		51.9	55.1		9.5		39.9	41.2		9.2	21	10.0	10.9	K	9.3		33.4	21.7	
9.5		56.2	51.4		9.3		53.4	39.8		8.5		44.8	31.5	K	9.5		24.2	1.5		9.5		36.9	38.1	
9.3	2	22.2	51.5		9.5	8	17.2	4.3		9.2	12	9.6	4.9	K	8.7		34.0	11.6	K	9.5		45.5	18.2	
9.1	4	11.4	38.5	K	9.3		33.4	28.3		7.0		27.7	27.3	K	8.6	22	48.3	48.1		9.3		49.9	55.0	
9.5		11.9	46.5		9.0		46.7	51.3	R	9.5		36.9	52.1		9.5		49.4	4.6		9.4		57.0	5.3	
9.3	5	6.4	34.0		9.2	9	1.4	23.0		9.5	13	11.0	36.7		7.0	23	16.2	13.0	K	9.3	27	33.1	51.0	
9.3		10.0	40.3		8.2		5.8	1.9	L	9.5		49.2	4.2		9.4		27.3	45.1	B	8.8		35.5	43.2	K
9.1		35.4	9.9	K	9.0		18.5	24.0	K	9.3	14	6.4	39.6		9.0		28.4	23.4	K	9.4		46.2	55.3	B
9.2	6	8.3	41.2		9.0		27.4	30.7		9.5	15	3.4	6.7		8.5		36.0	37.7	R	9.3		53.0	29.0	
9.2		15.5	50.3		9.5		43.3	16.1		9 5		18.5	13.7	b	7.0	24	5.2	13.0	Kb	7.6	28	17.7	47.4	K
8.7		20.0	45.8	K	9.3		47.1	39.3		9.0		46.4	56.7	K	7.1	25	22.9	22.8	K	9.5	29	12.3	16.8	b
9.5		40.4	3.2		8.3		53.0	42.3	B	9.3		49.3	35.0		9.5		32.4	45.1		8.6		45.1	42.9	K
8.5		59.0	50.0	K	8.8	10	2.9	17.2	K	8.0	17	7 9	36.4	B	9.4		33.4	10.2		9.5	30	32.2	53.1	
9.3	7	7.4	10.6		8.7		9.4	49.3	R	9.5		9.4	13.4		9.0		34.4	31.9	K	9.5		46.3	20.8	
9.5		10.0	52.4		9.5		9.4	58.0		9.5		46.6	48.6		9.2		35.4	25.2	K	9.5		50.0	2.1	
9.0		25.3	2.1	K	7.4		19.3	32.1	b	6.7	20	0.2	13.6	L	8.7		50.4	11.9	K	9.5	31	52.0	10.6	
9.5		27.4	34.3		9.5		29.3	57.6		9.1		6.9	8.5	R	9.5		52.4	49.9		7.8	32	43.6	2.4	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		30.81	3.34		10pr.		30.87	3.34		10pr.		30.94	3.33		10pr.		31.10	3.32		10pr.		31.16	3.31	

9°—2°

+15°

101—160					161—220					221—280					281—340					341—400				
	0ᵘ		+15°			0ᵘ—1ᵘ		+15°			1ᵘ		+15°			1ᵘ—2ᵘ		+15°			2ᵘ		+15°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.5	32	54.0	48.5	L		9.0	58	53.1	35.1	L		8.9	22	31.3	29.1	L		9.5	49	47.8	53.1			9.4	20	48.2	48.5	
9.0		55.1	29.3	B		9.5	59	22.5	6.5	a		9.0		34.4	28.4			9.5		58.8	19.6			9.2	21	0.9	11.7	
9.5		58.4	31.1			9.5		41.0	11.2			9.1		59.3	50.0			9.4	50	22.1	33.0			9.5		12.2	21.1	
9.4	33	14.3	30.5	B		8.0	0	11.8	4.7	K		9.2	23	33.5	50.9			9.0		43.7	49.5	K		9.5		50.5	23.5	
9.1	34	36.6	48.4	K		9.5		31.1	28.5			9.5		43.6	22.0			9.1		47.6	49.4	a		9.5	23	32.0	56.4	
7.3	35	18.3	52.3	K		9.5		49.5	31.9			9.3		49.4	35.8			8.0		47.6	14.2	K		9.4		40.0	55.6	
9.5		56.9	4.7			8.4		53.5	1.2	Kb		8.0	24	9.1	19.3	B		9.5		56.0	39.6	B		9.5	24	11.3	43.1	
9.3	36	24.4	53.2	R		9.5		57.8	6.5			9.0	25	30.6	30.0			9.2	51	2.2	17.7			9.5	25	13.0	56.4	
9.2	37	13.4	16.3	b		9.5	1	49.7	2.4			9.3		31.4	57.6			9.5		20.0	16.0			9.2		50.0	51.1	
9.3		20.6	8.7			9.0	2	37.1	49.2	B		9.5		36.0	54.7			8.0		56.6	16.2	Kb		9.5		55.1	58.3	
9.5		23.5	23.9			9.4		55.8	37.8			8.5		51.1	24.8			8.9	52	14.7	44.9	K		9.5	26	59.5	11.9	
9.4	38	48.7	48.8			9.0	3	28.0	47.9	L		9.5		59.4	37.7	B		7.7	53	16.9	52.5	K		9.4	27	14.4	52.9	
9.5		57.2	10.4			9.1		29.0	55.3			8.7	26	14.3	2.4	K		9.5		44.5	36.0			9.5		28.4	32.8	b
9.5	39	43.8	35.0			9.5	5	4.5	5.7			9.3		23.0	25.1			9.3		44.7	32.9	Bb		8.1		40.2	58.3	K
9.3		50.3	20.1			8.5		8.4	59.5	K		9.2		23.9	3.7			9.5	54	1.4	16.7	B		9.3		51.2	3.3	
9.5	40	47.7	55.5			9.2	6	17.5	44.4	K		9.0	27	39.6	35.1			9.4		35.1	33.8			9.5	28	26.5	54.6	
9.5	41	6.0	10.0			6.5		25.9	22.5	K		9.5	28	3.3	59.6			9.5		39.7	3.1			9.5		45.1	49.0	
9.5		29.8	17.4			9.5		34.0	14.0			neb		55.0	3.0			9.1		56.3	56.6	K		9.4	29	31.7	31.2	
9.5		36.2	27.4			9.5		46.1	52.0			9.4	29	31.1	22.4		*	9.5	55	38.8	50.2			9.3		37.0	54.1	
9.4		46.5	6.9			9.5		49.7	26.2			9.3	30	0.1	51.1			9.5	57	15.7	41.5			9.5	30	59.4	57.8	
9.3		52.2	51.7			7.8	8	13.6	25.8	K		9.5		10.6	3.7			9.5		20.5	14.7			9.5	31	49.4	25.2	
9.2	42	5.0	11.4	K		8.0		33.5	24.7	K		9.1		12.4	36.9	b		9.5		23.3	35.7			9.5	32	20.2	17.5	
9.5		25.0	10.7			9.3		35.6	59.0			9.5		49.3	33.8			9.0		35.7	13.9	K		9.5		22.8	0.0	
9.3		30.8	47.5	K		9.4	9	43.4	2.1	B		6.8	31	26.9	54.2	L		8.8	0	7.5	30.5	K		9.5		25.2	20.4	
9.5	43	23.5	20.6	B		8.8		46.3	35.5			6.5		52.1	41.7	Kb		7.0		10.4	6.7	L		9.5		33.7	51.9	,
8.4	44	13.7	55.3	Kb		9.4	10	4.1	42.0			9.1	32	12.4	3.8			9.5		31.5	9.7			9.1		39.5	57.6	
9.1	45	24.5	55.0	B		9.5		33.7	55.1			8.5	33	24.0	47.9	Kb		9.4		46.1	14.9			8.8		39.8	3.1	K
9.4		32.3	23.9			9.3		47.9	53.0			8.9	34	3.6	49.0	K		9.5	2	11.5	22.6			9.0		45.4	34.0	
9.4		42.1	29.5			9.3		50.4	44.1	B		9.5		12.6	27.9			9.0		12.6	20.1			9.5		58.9	56.6	?
9.4		55.0	55.0	Bb		9.2	11	39.3	55.5	K		8.8		22.1	10.1	K		9.5		51.6	31.5			9.5	33	8.8	54.8	
9.4		55.4	51.7	B		9.2		56.6	37.9			7.8		39.4	2.8	K		9.3		58.8	41.6	K		9.5		11.6	55.5	
9.5		55.4	10.0			9.5	12	14.0	7.1	R		9.1		39.6	40.7			9.5	3	20.2	7.5			8.6		20.3	23.9	K
9.5	47	19.0	14.0			9.3		30.1	44.5			9.4	35	36.1	55.7	B		8.6		24.4	16.2	K		9.5		27.0	8.7	
9.1		22.1	47.9	K		9.5	13	29.6	36.9			9.5	36	26.6	32.8			9.5		36.5	32.7			9.1		29.2	0.7	Kb
9.3		38.0	25.7	Kb		9.4		51.0	56.0			9.1	37	41.6	33.1	Kb		9.2	4	42.6	6.9			9.5	34	44.0	55.2	
9.5	48	6.6	31.3			8.8	14	10.3	37.9	Kb		9.3		52.1	22.0			9.4	5	0.5	18.0			9.1	35	~~39.5~~	~~0.0~~	
9.5		55.5	48.3			9.5		11.6	27.5			9.5		59.7	0.2			9.1		11.5	24.3	Kb		9.5		46.2	48.3	
9.3		57.9	10.6			7.8		19.9	2.6	K		9.5	38	9.3	57.9			9.5		50.0	3.0			8.7		46.7	29.3	
8.5	49	38.5	34.0	L		9.3		51.9	49.3			9.5		21.1	36.5			9.5	6	44.5	16.0			9.5		55.1	15.1	?
8.7		46.0	23.6	K		9.2		57.6	33.1	a		9.3		46.1	50.2			9.5	7	25.2	2.7			9.5	36	41.7	41.2	
9.3		58.5	47.1	B		8.8	15	24.6	33.4			9.5		59.7	0.2			8.0		38.8	30.8	K		9.2	37	39.6	6.0	
9.2	50	5.7	15.7	K		9.3		47.6	58.8	B		9.4	39	1.5	41.4	B		8.1	8	2.4	8.9	K		9.4	38	6.1	43.7	
9.5		52.5	44.8			9.1		50.1	39.7	K		9.4		6.5	46.7	B		9.5		47.2	13.8			9.5	39	9.1	14.8	
8.0		54.3	32.3	K		9.3	16	23.3	53.2			9.3		46.9	58.0			9.5	9	31.1	23.6			9.3		26.4	41.6	b
9.5	51	16.2	18.5			9.5		35.0	29.6			9.4	40	0.6	44.9			9.5	10	29.2	11.3			9.5		53.4	33.2	
9.5		45.5	46.9			9.5		43.6	30.7			8.5		43.0	35.5	R		9.5		46.5	38.8			9.5		58.5	27.3	
9.4		46.6	8.2			9.3	17	28.7	15.0			9.0		44.0	35.1	R		8.9	12	0.2	34.5	Kb		9.5	40	21.2	11.9	
8.5		56.1	20.9	K		7.7		34.6	30.0	K		7.5	41	4.6	40.0	K		9.5		52.9	28.0			9.4		23.4	35.6	
8.9	53	14.3	53.5			9.2	18	8.5	4.4	Kb		9.2		50.3	7.0	Kb		8.0	13	53.5	30.1	K		9.5		41.2	50.4	
9.5		23.0	35.5			9.5		24.6	24.4			9.5	42	46.1	22.7			9.5		58.8	53.3			9.3	41	0.7	37.4	
9.3		56.7	15.9			9.5		51.7	12.9	B		9.4	43	24.0	57.8			8.1	14	2.2	19.9	L		9.0		0.7	30.5	
9.5	54	0.1	5.0			8.9	19	10.6	39.6	L		9.5		36.1	37.5			9.5		15.1	10.6			9.5		25.6	6.6	
9.5		22.9	54.1			9.5		17.1	35.5			8.5		47.0	41.6	R		9.0		41.9	32.5	K		9.5		52.2	53.8	
8.5	55	22.4	22.5	Kb		9.4	20	6.0	56.6			9.4	44	26.6	9.7			9.0		46.0	20.4			9.5	42	20.2	31.1	
9.5	56	56.8	52.4			8.5		15.8	14.1	K		9.5	45	19.6	45.5			8.5	16	38.3	1.2	K		9.0		30.7	7.0	K
8.0	57	16.0	28.1	K		9.5		18.2	39.7			9.5		30.7	37.5	b		9.5	17	20.2	29.4			9.5		38.8	18.2	
9.5		53.5	27.0			9.5		18.3	35.5			9.5	46	20.1	59.0			9.5	18	22.9	48.3			8.3	43	48.7	53.7	
9.5	58	1.4	58.6			9.5		30.6	58.8	B		9.5	47	54.1	30.7			9.3	19	8.0	52.5			9.5	44	11.7	13.1	
8.5		41.9	32.3	B		9.4	22	12.2	27.4			9.5	48	33.9	38.3			9.0		49.0	27.3	K		9.3		45.1	32.9	
9.0		47.8	51.3			9.1		16.6	39.0	b		9.1		55.9	19.5	Rb		9.4	20	32.6	31.8	R		6.5	45	7.9	53.5	Kb
10pr.		31.45	3.27			10pr.		31.87	3.18			10pr.		32.21	3.06			10pr.		32.62	2.87			10pr.		33.02	2.62	

298ᵃ 9.5 | 55 0.2 | 58.4

+15°

401—460					461—520					521—580					581—640					641—700				
	2ᵐ—3ᵐ		+15°			3ᵐ		+15°			3ᵐ		+15°			3ᵐ—4ᵐ		+15°			4ᵐ		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.2	45	55.3	24.8	K	9.5	8	58.6	5.5		9.5	34	14.9	53.9		9.5	58	0.0	46.7		9.3	22	39.1	27.6	B
9.5	46	24.9	37.2		9.5	10	3.1	37.2		9.1		15.2	21.0	b	7.8		2.0	17.8	L	9.5		54.8	37.0	
9.5		30.2	26.7		9.5		22.1	11.7		9.5		54.8	45.5		9.0		16.8	57.5		8.3	23	5.4	29.4	K
9.5		40.0	52.8		9.5	11	1.1	16.5		7.9	35	10.1	56.4	K	9.5	59	3.8	2.8		9.5		8.7	48.0	B
9.5		48.9	42.3		9.5		4.1	32.4		8.5		40.8	34.1	Kb	9.6		5.1	38.0		6.5		34.4	31.7	K
9.4	47	9.8	0.3		9.5		41.5	53.0		8.8	36	3.8	58.1	L	9.2		53.7	37.3	b	8.8	24	32.5	41.6	
7.8		12.7	42.8	K	9.3		56.1	26.4		9.5		26.7	10.9		9.5	0	17.5	50.4	?	8.6		41.8	30.2	
9.4		20.5	42.3		9.0		57.2	6.5	Kb	9.5	37	19.0	12.0	b	9.4		28.8	45.0		9.1	25	9.5	39.1	αB
9.2		21.5	41.4		9.0	12	9.3	53.4		8.0		23.4	48.3	K	9.5		48.5	35.0		8.8		21.8	39.3	B
9.3		24.7	36.9		9.0		22.8	48.6	R	9.4		39.7	52.6	B	9.2	1	41.8	28.3	R	9.1	26	15.0	31.3	Bb
9.5	48	22.6	40.9		9.4		43.6	41.0		8.0	38	8.0	54.5	K	9.4		57.6	56.2		8.5		19.8	11.4	K
9.4		29.0	30.7		9.5	13	8.6	3.5		9.5	39	11.8	21.2	B	7.5	2	41.5	34.6	K	9.4		48.6	0.0	B
9.5	49	21.5	48.3		9.5	14	13.6	29.1		9.5	40	13.7	25.6		9.4		52.1	27.9		7.7	27	16.5	52.1	K
7.3		24.2	41.6	L	9.0		45.5	50.2		8.2		30.6	3.2	K	8.0		56.8	13.7	K	9.0		46.5	22.5	
8.7	50	11.4	24.2	L	9.4		49.2	16.0		8.5		43.0	7.2	K	9.5	3	21.2	48.9		9.5	28	12.4	51.8	
9.5		22.2	16.9		9.5	15	29.1	33.1		9.4	41	59.7	58.0		9.4		27.4	60.2		7.0		23.8	33.9	K
9.0		57.2	48.3		9.1		31.3	10.8	b	8.5	42	2.2	33.1	L	9.5		49.2	12.7		8.0		53.4	38.4	K
9.4	51	25.9	38.4		9.4	16	16.3	46.6	B	9.3	43	3.0	3.4		9.5	4	2.7	56.4		9.5	29	6.5	32.8	
9.3	52	9.2	12.8	Bb	9.5		17.1	5.4		9.5		18.8	11.4		9.5		24.8	54.0		8.8		26.4	3.6	
9.5		28.3	20.3		9.2		50.2	32.3		9.2	44	28.1	7.1		9.5		49.5	8.9		9.5		43.2	22.9	
9.5		45.6	10.5		8.0	17	16.3	18.0	K	8.8		28.8	31.7		9.3	6	47.2	21.5	R	6.5		51.8	44.6	Kb
9.5		48.9	21.7		9.4		38.6	15.3		9.5		57.2	10.5		9.2		54.5	45.8	b	9.3	30	2.0	9.4	
9.0	53	35.8	45.0		9.4		55.7	0.5		8.6	45	4.4	8.5		6.3	7	33.0	2.3	K	8.4		2.5	12.8	K
9.5		39.4	25.9		9.5	18	54.7	2.0		9.0		36.5	39.7		9.2		42.5	27.0		8.9		42.5	14.8	
8.3		42.8	56.4	K	9.2	19	32.6	25.3		9.5		44.0	26.2		9.4		59.7	55.5		5.3		52.2	30.1	L
9.5	54	5.4	25.6		9.5		35.0	7.7		8.8		44.1	11.0		9.5	8	15.5	28.7		5.3	31	0.5	38.4	K
9.5		8.9	11.7		9.0	20	0.6	22.5	K	9.2	46	23.1	8.2	R	7.1		34.7	51.1	K	9.3	33	5.5	13.9	R
9.5	55	17.9	25.2		9.5		3.0	36.8	B	9.5		24.3	40.7		9.5		38.8	15.9		9.4		40.0	51.0	B
9.5	56	31.0	2.9		9.5		12.3	34.3	B	9.5	47	27.7	8.2		9.0	10	3.0	43.8	B	8.0		52.8	40.9	L
6.5		36.8	17.5	K	9.5		26.6	55.8		9.3		37.8	41.4	b	9.5		3.8	50.8		7.5	34	45.2	12.7	K
9.5	57	45.2	16.2		9.5		34.9	31.2		9.5	48	4.3	23.4		9.5		8.2	22.5		9.5	35	30.1	32.9	
9.5		56.8	59.4	b	9.5		59.1	1.2		9.4		11.0	49.0		8.8	11	32.4	17.3	L	9.0	36	8.5	47.5	
9.2	59	10.8	29.5		8.0	21	10.6	42.0	Lb	9.5		16.5	43.8		*9.5	12	1.6	41.1		9.5		35.7	43.6	
9.5		13.5	34.6		9.5	22	35.9	16.5		9.5		18.5	32.4		9.1		40.5	35.3	b	9.5	37	22.8	13.4	
9.5		31.7	2.7		9.2		44.0	58.1		8.4		42.7	6.1	K	8.9	13	43.5	25.6		9.0		31.8	39.5	
9.2		43.5	30.8	b	9.5		58.9	13.9		9.4	49	33.3	55.8		9.5	15	9.3	25.1	B	9.5		41.1	59.2	
9.5	0	34.2	1.6		9.5	23	22.1	29.6		8.4		47.8	12.0	K	9.5		29.0	35.3		9.4	38	7.2	44.4	
8.6	1	48.7	6.7		9.5	24	3.9	43.3		9.3	50	21.6	56.5		9.5		39.5	25.4	B	8.1		13.5	12.4	K
9.5	2	10.9	32.2		8.3		45.7	2.2	K	9.5		24.7	5.4		9.5		49.9	12.8		9.3		47.5	27.6	
9.5		15.6	5.5	α	8.8	25	11.6	2.4		9.3		58.3	6.4		9.4	17	16.2	11.4	R	9.5	39	26.5	58.2	
9.5		18.0	19.9		9.4		20.6	37.4		8.8	51	0.7	23.1	R	6.8		21.5	36.3	K	9.0		36.8	44.3	
8.0		21.3	26.3	K	9.2		48.6	7.8	Kb	9.4		32.3	8.5		9.5		29.2	17.5		9.2	40	32.7	41.6	
9.2	3	13.9	9.3	K	9.2	26	14.2	1.7		9.5	52	11.2	20.7		9.5		49.2	40.8		9.0		33.2	12.7	K
9.5		18.1	40.7		9.5		37.5	59.7	R	9.3		29.8	33.1		7.7		50.3	10.9	K	8.8		36.5	18.9	K
9.5		39.2	33.0		8.6		40.2	37.9	K	7.7		33.5	3.9	L	5.0	18	5.6	16.8	Kb	8.6		45.4	36.0	
7.5		50.6	35.4	L	9.5	27	20.9	43.3		9.5	53	2.4	55.1		9.3	19	18.2	41.5		8.3	41	14.5	37.7	K
7.0	4	18.0	57.4	K	7.9		56.8	59.6	K	9.3		9.3	42.9		8.2		20.5	15.5	K	6.5		26.5	38.3	K
9.0		30.2	35.8		9.5	28	2.1	5.0		9.5		30.0	54.0		*9.4		30.1	6.2		9.5		40.6	22.8	
9.5	5	47.1	15.0		9.5		54.6	19.8		9.4		39.3	23.8		*9.5		53.5	28.4		7.5		41.0	15.8	K
7.3	6	3.3	2.5	K	9.5	29	2.4	7.8		9.5		43.8	55.3		8.7	20	3.1	59.0	P	9.0	42	18.1	26.9	
9.5		25.9	40.1		9.5		21.1	7.1		9.1		58.6	6.8	K	4.0		17.4	38.8	Kb	9.4		19.8	31.7	
8.5		58.9	46.5	K	9.5		30.4	5.5		9.5	54	48.3	49.3		4.0		22.4	32.9	K	7.5		28.5	58.1	L
8.5		59.4	43.0	K	9.1	30	22.8	54.3		9.5		51.7	47.9		6.5		42.1	50.8	K	9.4		45.8	5.4	
8.9	7	21.9	22.0	B	8.8	31	16.1	21.4		9.0		52.2	14.7	L	9.5	21	10.8	55.4		9.3	43	3.6	49.3	
9.5		36.7	19.0		9.1		31.3	42.3		9.5	56	40.6	11.3		8.5		48.4	51.1		8.0		6.6	11.6	K
9.5		38.2	32.6		8.3		49.6	53.0	Kb	9.0	57	11.8	17.5		6.0		52.8	19.0	K	8.3		7.0	38.0	
9.5		46.4	25.0		9.5	32	31.1	2.5		9.3		14.0	3.6	αB	5.0	22	15.4	52.7	K	9.5		40.5	29.3	
9.4	8	28.2	3.6	α	9.5		49.9	48.1		9.4		22.9	6.6	B	9.1		18.1	24.6	B	9.0	45	30.7	30.4	
8.7		35.5	6.5	K	9.5	33	13.7	46.2		8.7		29.0	20.0	L	5.5		23.8	23.1	L	8.0		37.4	40.9	K
9.3		55.0	59.9		9.3		28.2	45.7		8.1		43.3	6.1	L	7.5		29.4	48.9	K	9.5	46	27.0	52.5	
		+	+				+	+				+	+				+	+				+	+	
10pr.		33.31	2.39		10pr.		33.57	2.14		10pr.		33.83	1.83		10pr.		34.01	1.54		10pr.		34.17	1.21	

612ᵉ			
9.5	12	0.2	48.7
628ᵉ			
var	19	41	42.9

701—760

m	4ᵘ−5ᵘ	+15°	
9.4	47 0.0	13.4	
9.5	46.4	17.9	
9.3	48 14.0	35.0	Kb
9.5	23.7	28.3	
9.5	43.9	3.6	
9.4	59.0	10.6	
9.7	49 53.7	34.2	Kb
9.5	50 22.5	34.7	B
9.0	23.7	24.1	L
9.4	30.4	29.5	B
9.4	48.4	52.4	
9.5	51 3.7	36.3	
7.0	25.7	42.1	Kb
9.2	36.4	5.3	
9.5	56.1	54.3	
9.3	52 34.3	38.0	
9.5	43.0	57.3	
9.5	47.3	55.9	
8.2	53 3.7	33.3	K
9.5	8.0	54.0	
8.3	9.5	0.7	K
9.5	18.3	3.3	
8.7	43.4	58.3	L
9.3	53.4	28.7	
9.4	54 14.7	45.3	
9.4	32.9	7.0	
9.5	48.0	57.8	
9.3	55 12.5	52.7	
9.4	29.0	55.8	
9.5	34.4	26.4	
9.3	58.9	2.9	
5.3	56 18.0	12.3	K
9.0	38.7	45.7	
9.5	43.9	54.9	
8.0	57 0.9	2.8	K
9.2	22.2	59 8	B
9.5	39.0	38.0	
9.4	44.0	25.8	B
9.4	52.0	58.3	
9.3	58 2.8	55.0	
8.6	38.6	55.3	L
7.8	45.4	44.5	K
9.5	51.5	27.9	
9.5	57.3	19.4	
9.5	59 0.0	14.2	
9.4	16.4	46.0	R
9.5	37.0	1.8	a
9.4	40.9	24.2	
7.8	47.8	39.9	K
8.9	0 29.2	2.4	Kb
9.3	59.0	2.1	
5.0	1 24.6	24.9	K
9.0	41.8	29.3	K
9.5	2 21.4	41.7	
8.6	23.1	5.3	
9.3	38.2	32.0	
9.1	3 8.7	54.8	
9.2	16.7	27.0	
5.7	22.6	51.5	K
9.4	37.6	12.9	
10pr.	+ 34.28	+ 0.93	

761—820

m	5ᵘ	+15°	
8.9	4 1.3	1.1	Kb
8.9	3.6	44.3	
9.5	5 11.9	29.6	
9.5	6 14.0	37.7	
9.5	17.0	57.8	
9.1	22.1	2.3	K
9.4	35.2	54.4	
9.5	41.1	10.9	
8.9	7 7.3	28.3	
9.4	11.9	32.1	
9.5	12.3	47.6	
9.5	22.7	55.0	
9.5	30.4	58.2	
9.5	34.3	28.3	
9.2	53.6	24.6	
9.5	8 4.7	39.7	
9.5	18.9	32.4	
9.2	23.1	14.9	
8.5	50.2	5.4	K
9.1	9 17.5	49.2	b
9.2	25.9	30.2	
9.3	26.5	39.6	
9.5	42.9	17.8	
9.5	10 31.1	32.7	
9.4	40.5	3.1	
9.5	11 3.7	6.6	
8.2	20.1	37.6	K
9.5	41.8	27.6	
9.2	43.8	58.2	K
8.0	12 24.4	29.2	K
9.4	31.4	46.7	
9.5	52.8	37.5	
9.3	13 5.7	52.9	
9.4	6.5	15.1	
7.7	20.3	42.4	K
9.5	21.4	19.6	
8.6	39.3	56.8	K
9.5	41.4	15.2	
7.2	14 3.1	58.2	K
9.5	18.9	18.4	
9.5	27.9	9.9	
9.5	53.0	30.7	
9.3	54.5	55.4	
8.6	15 9.8	52.6	K
8.0	11.5	52.5	K
9.5	20.4	31.6	
8.5	16 16.7	48.3	
9.4	21.4	2.3	
8.9	46.8	13.4	
9.0	17 20.4	26.8	K
9.5	29.5	40.4	
9.5	33.3	35.1	
7.8	37.1	19.6	K
7.5	42.7	32.0	B
9.5	49.9	1.5	
9.0	58.3	58.0	
9.3	18 22.7	4.1	
9.5	42.9	22.3	
9.5	48.0	40.2	
9.5	48.7	14.1	
10pr.	+ 34.35	+ 0.68	

821—880

m	5ᵘ	+15°	
9.4	18 54.2	35.0	
6.5	56.2	7.7	K
9.3	59.9	17.7	
8.0	19 10.5	54.9	L
9.5	14.6	26.6	
6.0	25.9	45.1	K
9.5	41.3	28.1	
9.3	46.0	3.2	
9.1	58.3	4.6	
9.5	20 33.1	16.3	
9.4	56.4	12.3	
9.5	21 22.0	9.3	
9.5	25.4	32.9	
9.5	37.4	42.6	
9.5	22 0.1	41.7	
9.5	1.9	57.4	
6.5	8.4	14.6	K
8.7	53.5	40.8	K
9.5	58.3	25.5	
9.0	23 12.6	11.9	
9.3	18.6	2.8	
9.5	21.7	24.5	
9.5	53.6	46.0	
9.5	56.9	18.5	
9.3	24 8.6	49.2	
9.5	9.4	4.8	
9.3	13.1	21.0	
9.5	14.9	50.9	
9.1	22.9	9.7	
9.5	43.7	22.8	
8.3	48.2	50.7	Lb
9.0	25 7.4	54.8	
9.0	8.3	30.1	
9.2	30.2	6.8	
9.3	38.4	0.4	
7.5	41.0	28.8	K
8.4	26 8.6	41.9	K
9.5	22.7	11.0	
9.5	25.9	22.7	
9.3	44.3	37.9	
7.6	44.6	32.0	K
9.5	27 10.7	40.2	?
9.3	12.3	41.0	
9.5	28 19.5	9.0	
9.5	23.3	48.3	
7.9	29.3	31.9	K
9.3	29 1.1	22.2	
9.0	3.5	47.5	
8.8	5.7	37.9	K
9.1	10.2	37.7	K
8.6	20.2	9.4	K
8.3	32.5	49.0	K
9.0	41.9	4.8	K
9.3	49.2	30.4	
9.5	30 2.9	33.5	
9.3	12.0	5.9	
9.5	13.9	31.1	
9.5	31 10.9	34.0	
9.4	11.7	29.5	
9.1	21.5	13.3	K
10pr.	+ 34.38	+ 0.51	

881—940

m	5ᵘ	+15°	
9.5	31 27.9	23.1	
9.5	29.7	30.6	
9.5	33.4	0.4	
9.5	36.5	33.8	
9.5	42.1	31.3	
9.0	57.3	28.5	
7.1	32 0.7	16.0	K
8.4	16.8	1.2	Kb
9.3	21.4	48.6	
9.5	28.0	17.5	
9.4	28.4	1.2	a
9.5	30.0	12.0	
9.0	38.6	57.3	
9.5	52.3	40.0	
9.4	33 13.5	18.1	
8.0	16.1	8.0	K
9.5	23.6	3.4	
9.5	23.9	27.2	
9.0	50.6	11.2	
9.5	54.9	19.8	
9.5	57.0	2.8	
9.1	34 12.3	42.8	b
9.5	28.8	48.7	
8.7	30.8	7.4	K
9.5	52.0	5.6	
9.5	53.5	41.3	
9.5	59.1	46.8	
9.4	35 4.1	30.0	
9.5	4.7	27.3	
9.5	11.0	6.5	
9.5	25.1	17.8	
9.5	25.7	46.7	
9.4	35.4	11.3	
9.5	43.3	44.7	
9.2	43.4	56.0	
9.5	36 11.5	56.4	
8.8	38.9	34.2	K
9.5	44.7	8.8	
9.5	37 2.4	45.8	
9.5	5.7	8.2	
9.5	6.1	26.9	
9.2	19.4	15.4	
9.5	40.9	11.0	
9.5	38 12.3	51.1	
9.5	23.7	29.3	
6.2	25.5	46.0	K
9.5	36.2	56.2	
8.8	41.0	47.3	K
8.8	46.9	24.6	
9.5	58.7	3.5	
8.5	39 12.5	40.0	K
9.5	23.4	44.4	
9.5	29.4	49.7	
9.4	37.7	18.7	
9.5	39.3	33.1	
9.5	50.5	39.1	
9.4	53.7	33.5	
9.5	54.2	6.2	
9.5	57.4	37.2	
9.5	40 5.3	0.6	
10pr.	+ 34.40	+ 0.36	

941—1000

m	5ᵘ	+15°	
9.5	40 36.4	40.5	
9.5	47.9	7.7	
9.5	41 21.3	36.1	
9.4	24.3	11.5	
9.0	41.4	57.3	K
9.5	41.9	42.8	
9.2	43.8	37.2	K
9.5	42 4.8	54.7	
9.0	11.3	28.1	
9.3	47.9	45.1	
9.5	43 4.2	3.1	
9.5	5.1	27.5	
9.5	7.2	40.6	
9.5	7.3	46.0	
9.5	22.0	10.1	
9.4	31.9	53.2	
8.7	38.4	35.7	L
9.5	40.7	21.2	
9.3	41.8	1.6	
9.5	50.0	52.5	
9.5	58.7	54.3	
*9.5	44 6.0	8.1	a
9.5	10.1	4.3	
9.5	10.2	30.0	
9.5	11.3	33.9	
9.3	23.1	6.8	Kb
9.5	38.2	7.2	
9.5	43.5	20.5	
9.4	47.1	44.1	
9.2	50.7	19.0	
9.4	52.0	36.3	
9.5	45 19.7	31.5	
9.3	31.5	24.4	
9.5	43.1	50.4	
8.9	44.0	3.9	Kb
8.4	46 18.7	28.8	L
9.4	28.8	2.3	
9.5	33.9	44.8	
9.5	47.4	3.8	
9.5	53.3	46.0	
9.5	55.5	40.6	
9.5	58.5	17.7	
9.5	47 0.5	13.0	
9.5	4.9	42.7	
9.4	48.2	11.4	
9.5	48 2.6	6.5	
9.0	15.9	45.2	
9.0	18.7	55.6	
9.0	22.9	58.5	
9.5	28.9	56.9	
8.1	30.6	3.3	L
9.4	34.1	58.1	
8.2	40.7	43.6	B
9.3	45.8	41.6	a
9.5	52.9	8.4	
8.9	54.2	45.8	
8.8	54.6	10.7	K
9.5	49 8.5	52.3	
9.4	12.4	30.3	
9.3	37.2	53.4	
10pr.	+ 34.41	+ 0.22	

962ᵃ var | 44 | 6 | 45 |

1001 – 1060					1061 – 1120					1121 – 1180					1181 – 1240					1241 – 1300				
	5ᵃ		+15°			5ᵃ–6ᵃ		+15°			6ᵃ		+15°			6ᵃ		+15°			6ᵃ		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	49	38.1	38.9		9.3	57	38.9	31.3		9.5	5	35.1	38.0		7.9	15	51.4	55.5	K	9.3	26	3.4	48.7	
9.5		45.9	5.9		9.1	58	2.2	6.1		9.3		49.0	57.5		9.5	16	6.0	15.8		9.3		11.3	11.2	K
8.8		59.3	48.3		9.5		3.4	38.1		8.6	6	9.0	19.9	K	9.0		28.2	53.4	K	9.3		28.9	3.4	
9.3	50	2.9	26.8		9.3		19.0	11.1		9.3		37.9	50.1		8.8		34.4	5.4		8.6		29.1	11.1	K
9.5		26.9	18.9		7.9		24.3	33.8	K	9.0		38.1	39.4		9.2		59.0	26.0		9.4		34.9	28.8	
9.3		39.9	58.5	R	9.5		27.3	54.6		9.5		47.3	1.3		9.5	17	16.7	36.9		var		39.0	26.6	L
8.5		45.3	17.9	K	9.2		32.9	45.7	K	9.2		54.1	21.6		9.4		26.2	58.5		9.4	27	1.0	39.8	
9.5		55.3	46.5	*a*	9.5		48.2	32.9		8.9	7	12.5	52.0		9.2		33.0	42.3		9.5		3.7	2.4	
9.4	51	0.5	1.4		8.5	59	13.9	36.9	K	9.5		13.0	5.1		9.4		34.1	3.7		8.7		6.4	49.2	
9.4		7.3	48.7		9.5		38.2	52.2		9.0		17.6	27.1	K	9.5		36.4	6.0		9.5		9.6	34.6	B
9.5		12.5	21.8		9.5		46.0	48.1		9.5		18.9	9.3		7.2		42.5	13.7	L	8.9		20.7	5.4	Kb
9.5		14.1	24.8		9.0		57.3	44.9	K	9.5		42.1	9.2		9.5		46.0	54.2		9.3		34.5	30.8	K
9.1		24.3	18.2	K	9.5	0	8.0	9.2		9.5		46.2	54.1		9.4		48.7	58.5		9.5		38.1	27.4	
9.5		35.3	32.0		9.4		10.6	0.1		9.0		53.9	32.7	K	9.0		49.8	18.0		9.4		58.1	43.9	
9.5		36.0	16.6		9.2		14.0	49.2	K	9.5	8	6.7	0.2		9.5		59.2	11.6		7.5	28	9.3	52.2	K
9.0		38.6	36.0		9.5		20.9	51.0		8.7		18.0	50.8	K	9.5	18	9.1	25.3		9.5		36.8	53.3	
9.1		47.4	1.9		8.7		22.7	12.1		9.0		30.4	36.7		7.0		18.5	36.0	L	9.5	29	6.0	58.9	
8.1		57.1	6.3	K	9.5		29.6	13.2		9.5		42.8	53.4		9.2		22.8	32.2	*R*	9.5		6.7	37.8	
9.4		59.6	53.4		8.7		35.6	43.6		7.5		46.0	54.1	K	9.5		31.0	51.6		8.9		20.5	19.5	
9.5	52	3.6	44.9		9.5		44.3	18.7		9.5		46.6	35.3		9.4		43.5	59.0		8.8		24.2	32.3	
9.5		12.6	4.0		9.5		58.4	26.0		9.5		47.8	11.7		9.5	19	5.7	21.5		8.5		24.5	17.3	
9.5		29.3	11.2		9.5	1	16.3	59.3		9.4		52.3	53.6		8.9		7.9	12.4		8.6		28.8	8.9	
9.5		30.5	5.5		9.5		29.8	23.6		9.5		56.8	46.4		8.3		35.4	47.1	K	8.2		36.5	53.8	*B*
9.5		35.5	33.2		8.8		37.9	21.6		9.4		58.5	9.9		9.3		36.3	46.8		9.3		55.0	38.5	
9.5		41.9	44.6		9.4		41.9	15.0		8.8	9	36.5	46.3	L	9.3		47.5	23.9	K	9.5		56.8	48.2	
9.4	53	11.5	7.8		9.5		54.0	3.6		9.0	10	5.0	12.5		9.5		57.8	4.1		8.9	30	7.6	9.5	
9.5		30.4	5.7		7.5		56.4	56.2	K	9.4		5.5	30.0		9.5		58.2	57.1		8.9		33.1	21.9	K
9.5		30.9	0.6		9.2		58.3	49.5	R	9.1		9.6	36.2	*b*	9.5	20	16.9	26.5		7.8		38.1	20.1	K
9.1		33.6	36.4	*b*	9.1	2	2.3	45.5	R	9.0		11.4	42.5		9.5		25.5	19.2		8.7		48.3	15.3	K
8.5		44.7	11.4	K	9.0		5.8	6.4		9.5		34.9	54.1		9.4		36.3	57.4		9.2		56.8	28.0	K
9.5		48.1	20.0		9.5		25.3	36.0		9.5		46.3	20.4		9.3		54.8	32.5	*K*	8.8	31	30.6	55.1	
9.5	54	20.9	46.0		9.5		37.0	28.6		9.5	11	14.0	2.2		9.3		59.4	43.1		8.7		39.2	13.0	K
9.5		21.2	20.0		9.5		38.4	43.7		9.5		18.6	6.9		9.3	21	7.0	44.6	B	8.6		46.7	51.7	L
9.5		23.1	13.8		9.3		41.0	5.8		9.3		34.7	53.9		9.1		19.6	28.9	K	9.5		48.7	28.2	
9.5		28.5	40.7		8.7		41.2	50.6	K	9.4		35.4	32.2		9.5		25.4	14.7		9.0		51.5	49.0	
9.5		43.0	14.4		9.4		53.3	38.2		9.5		41.6	54.2		8.7		45.4	44.4	K	9.5	32	8.3	10.0	
9.5		47.4	53.8		8.3		54.2	35.2	K	9.5		56.9	4.4		9.5		46.3	35.3		9.5		15.4	15.0	
9.4		51.5	11.8		9.5	3	2.5	1.8		9.5	12	20.8	24.8		9.5		56.1	18.1		9.4		25.3	55.7	
9.5		52.5	13.3		9.5		7.6	47.7	*a*	8.8		22.7	45.5		9.5		57.0	32.3		9.3		31.5	55.3	
9.5		59.0	10.4		9.5		15.5	6.5		8.8		40.3	6.8		9.5	22	37.4	58.5		9.4		46.9	54.8	
9.5	55	2.0	11.2		9.5		15.5	37.9		9.5		46.2	41.2		8.1		58.3	50.3	L	7.8	33	4.4	33.4	K
9.5		7.3	37.6		9.1		16.6	18.8	B	9.5		50.0	57.8		9.5	23	8.8	17.4		9.5		24.6	23.7	
9.5		10.2	54.2		9.0		33.1	22.1	K	9.5		59.1	8.4		7.9		10.2	57.0	K	9.5		25.0	21.9	
9.1		13.6	50.8	*b*	9.5		47.6	57.2		9.5	13	19.5	24.6		7.9		14.2	31.0	L	9.5		30.4	11.1	
9.5		35.0	1.6		9.2		51.8	36.9	K	9.0		22.6	26.3	K	9.1		20.7	8.1	*a*	9.3		31.1	8.3	
9.5	56	12.9	43.6		9.5		59.6	13.8		9.4		28.8	35.0		8.5		24.0	27.4		8.9		59.0	57.4	
9.4		16.3	55.2		8.7	4	7.6	22.9	K	9.4		32.7	46.1		9.1		38.4	29.0		9.5	34	17.3	22.8	
9.0		16.5	11.6		9.5		13.9	47.2		9.1		34.9	33.1	K	9.1		42.8	13.7	*a*	9.5		22.4	11.0	B
9.3		17.9	33.8		9.5		17.7	0.3		9.2	14	10.7	50.1		8.0		50.0	13.0	B	9.4		30.5	48.8	
8.9		21.2	49.4	R	9.0		26.6	22.1	K	9.3		11.6	5.4		7.5	24	0.9	48.8	K	9.4		31.2	19.2	
9.5		25.4	23.5		9.5		49.3	57.3		9.1		17.8	37.4	K	9.1		8.0	22.8		9.5		38.2	27.2	
9.0		49.9	22.3	K	9.5		50.3	42.1		9.3		24.1	52.7	K	9.5		20.6	19.7		9.5	35	2.3	22.8	
9.3		50.7	21.1		9.2		54.9	57.3		8.4		48.6	54.6	K	7.0		22.4	7.1	Kb	9.5		5.8	52.7	
7.7		53.3	27.6	K	9.3	5	0.0	45.4	K	9.5		52.6	53.9		9.5		36.7	5.8		9.2		20.7	44.5	*b*
9.5		59.0	56.1		9.5		15.3	50.0		8.8	15	4.9	55.5	K	9.0		40.1	16.9	K	9.5		32.0	15.1	
9.4	57	3.1	0.7		9.3		20.4	0.1	K	8.0		7.3	10.4	K	9.0		50.7	55.7	K	9.2		32.8	37.0	
8.0		4.6	11.3	K	9.3		28.0	29.5	K	9.1		11.4	39.7		9.2	25	7.9	29.3		9.3		37.2	41.9	
8.9		12.3	25.3		8.8		29.8	6.6	K	9.5		23.7	55.4		9.2		20.1	17.8		9.5		46.6	22.1	
9.3		31.5	13.5		9.5		30 3	26.8		8.8		27.8	2.8	Kb	9.0		35.3	9.7	K	9.3		48.3	54.5	K
9.5		37.6	28.1		9.4		32.0	15.1		9.5		52.6	35.2		9.1		49.5	3.2		9.5		57.0	42.3	
		+	+				+	—				+	—				+	—				+	—	
10pr.		*34.42*	*0.09*		*10pr.*		*34.43*	*0.03*		*10pr.*		*34.42*	*0.16*		*10pr.*		*34.41*	*0.30*		*10pr.*		*34.39*	*0.46*	

1301—1360					1361—1420					1421—1480					1481—1540.					1541—1600				
	6ᵃ		+15°			6ᵃ		+15°			6ᵃ—7ᵃ		+15°			7ᵃ		+15°			7ᵃ		+15°	
m					m					m					m					m				
9.5	35	58.0	45.3		9.3	45	31.1	27.3		9.2	52	51.3	51.6	α	8.6	0	36.1	44.7		6.8	11	52.0	25.6	K
9.5	36	9.0	58.1		9.4		38.3	49.7		9.5		58.3	46.0		8.1		49.9	40.1	B	9.5	12	14.1	56.0	
9.5		15.5	41.8		9.4		39.3	6.3		8.5	53	0.1	26.0		9.5		58.7	49.5		9.5		22.8	32.7	
9.5		17.4	36.5		9.5		59.3	33.7		8.9		2.2	40.6		9.3	1	2.8	52.0	α	9.0		23.0	9.6	K
9.5		25.3	3.5		9.5		59.3	26.8		9.0		12.8	52.6	K	9.4		16.6	45.4		9.0		32.2	55.8	
9.3		32.3	56.5	K	9.5	46	8.5	14.4		9.3		16.0	67.4		9.4		58.9	6.7	α	9.1		37.6	39.3	b
9.5		34.5	3.3		8.9		13.1	36.6		8.5		32.0	2.8	K	9.2	2	3.0	50.5	K	9.2		39.9	26.8	K
9.0		44.1	45.2	K	9.5		15.0	14.5		9.4		35.5	35.4		9.5		8.4	40.0		9.5	13	54.3	5.6	
8.3	37	12.0	37.3	K	9.5		57.5	7.5		9.4		46.0	57.2		9.4		11.3	46.8		9.5	14	8.3	12.9	
8.3		18.3	57.4	K	8.4	47	1.5	51.5	Kb	9.5		50.7	57.7		9.3		15.0	57.5	K	9.5		9.6	28.5	
8.7		52.3	20.0	K	9.2		2.9	15.4		6.0	54	0.3	32.4	K	9.5		26.1	44.3		9.5		24.1	44.8	
9.5		52.4	37.2		9.3		11.6	23.8	K	9.5		16.5	20.2		9.5		44.7	1.9	α	9.5		27.8	37.8	α
9.0	38	2.2	31.8	K	9.5		15.8	55.5		9.3		30.1	2.5		9.2		50.0	57.9	K	9.4		39.6	52.5	
9.4		2.7	14.2		9.4		19.2	46.0	K	9.3		35.2	3.2		7.3		59.9	34.2	K	6.9		45.4	37.9	B
8.6		6.9	15.6	K	9.5		35.3	37.2		8.6		42.2	28.1	K	9.4	3	9.8	16.1		9.2		47.4	16.4	
9.1		10.5	14.6	α	9.5		40.0	8.6		9.0		59.9	44.7		8.6		23.3	22.7	K	9.5		51.0	52.9	
8.8		11.4	33.1	K	9.4		41.0	1.9		9.0	55	0.0	27.5	K	8.6		45.5	24.4	K	9.2		55.6	12.5	
9.4		36.2	3.9		8.0		53.8	27.4	K	9.1		1.7	12.7	K	8.8		49.8	1.5	K	9.2		57.9	22.5	B
9.4	39	4.6	28.1		9.2		54.7	45.6		9.5		15.3	20.5		9.5		58.9	23.8		8.5	15	16.6	35.0	B
9.2		23.5	51.9	b	9.2	48	1.8	15.4	K	9.5		27.6	0.5		9.5	4	11.5	22.9		9.5		35.8	30.9	
9.4		26.1	25.1		9.5		3.5	49.2		9.2		38.7	31.2		9.5		17.7	13.7		8.6		42.8	26.6	K
9.2		44.0	26.5	α	9.2		4.8	52.7	R	9.0		40.8	28.1		8.9		23.1	31.0	K	9.5		57.7	43.5	
9.5		47.0	44.6		9.5		4.9	43.6		9.0	56	0.8	5.3	K	9.3		28.2	8.1		9.2	16	0.8	23.7	B
9.5		54.9	41.5		9.3		21.3	46.9		7.5		3.9	26.8		7.5		31.7	25.1	K	7.0		13.4	47.6	L
9.5	40	13.2	53.3		8.7		46.0	46.6		7.7		4.7	5 3	K	8.3		34.2	35.1	K	9.5		39.1	40.6	
9.2		14.9	48.5		9.3		46.6	55.6		9.0		11.2	45.5		9.5		48.5	3.8		9.2	17	15.4	7.1	B
9.0		18.3	25.9		9.2		53.2	1.4		8.9		17.8	28.9		9.5	5	2.2	45.8		9.5		17.6	22.2	
9.5		23.4	12.4		9.2	49	6.0	21.6	K	9.5		18.0	5.6		9.3		5.5	2.1	α	8.9		18.7	59.8	
9.3		53.8	53.1		9.5		25.1	59.1		9.5		19.5	31.4		8.9		12.1	27.7	K	9.5		26.6	2.5	
8.8		56.1	54.5		9.5		40.9	49.5		9.5		23.0	27.0		9.5		16.5	41.2		9.3		47.9	8.4	α
9.3	41	17.4	37.2	K	9.5	50	9.4	40.7		9.5		32.6	50.3		9.4		25.0	55.4		8.5		56.0	7.5	K
9.0		21.2	2.5	Kb	9.5		13.6	31.8		9.2		39.1	13.2	K	8.7		31.5	36.0	K	9.3	18	50.9	28.4	
9.3		26.0	53.1		9.5		16.5	42.0		9.5		40.9	49.2		9.4		38.6	36.7		9.0	19	7.8	56.7	K
9.1		31.6	6.8	K	9.5		26.5	33.6		9.2		49.6	32.3	K	9.1	6	2.3	1.8	Kb	7.3		11.4	35.4	K
9.5		49.5	9.0		9.2		26.7	5.4		9.5		50.3	41.6		8.2	7	2.3	29.0	K	9.5		23.9	7.8	
9.3		54.0	43.3	K	9.5		28.6	21.1		9.2	57	8.1	36.3	K	9.3		3.0	23.3	K	9.4		47.5	56.7	
*9.4	42	3.4	22.4		9.3		30.0	15.1		9.3		13.8	33.4	α	9.3		8.8	30.3	K	8.5		51.2	49.3	K
9.2		7.8	49.0	K	9.5		37.7	26.9		9.1		32.2	14.3	K	9.3		13.1	30.6	K	9.3	20	18.6	39.3	
9.5		8.2	55.4		9.5		38.3	8.3		8.7		37.5	8.5		9.5		21.6	50.6		7.0		34.4	24.6	L
8.5		34.0	47.1	K	9.5		44.9	38.6		9.3		39.1	58.6		8.4		37.6	3.5	Kb	9.5		38.3	4.6	
9.0		35.5	57.7	K	8.8		46.4	45.0		7.0		40.0	23.6	K	9.5		40.2	56.9		9.5	21	25.4	21.6	
8.6		35.7	7.8		9.2		50.8	21.0		9.3		58.1	52.7		8.5		43.9	36.0	K	9.3		49.6	27.7	
9.5		40.2	42.3		9.4		52.7	14.4		9.2	58	23.4	50.2	K	9.5		51.2	38.6		9.1		49.6	13 2	Kb
9.4		42.8	2.5		8.4	51	6.0	45.5		9.5		35.4	6.5		9.5	8	20.7	52.3		9.5		51.5	40.2	
9.4		44.0	51.9		9.5		13.3	39.4		9.5		35.5	57.2		8 8		38.1	41.4	K	9.5	22	12.5	45.8	
8.6		47.9	22.0		8.8		18.1	28.7		9.4		57.7	44.4		9.4		39.5	22.2		9.0		46.1	49.2	K
7.3		57.4	14.6	L	9.3		20.0	53.0		9.5	59	1.8	25.1		9.5		50.0	58.3		8.6	23	1.6	32.6	K
9.5		58.2	50.8		9.3		44.8	56.9		9.5		26.2	58.9		9.5	9	18.9	52.0		9.1		21.1	39.2	K
9.5	43	47.2	11.4		8.5		45.0	55.1	K	9.5		30 5	17.9		9.1		46.1	17.6		8.7		21.5	37.4	K
9.3	44	13.6	17.7		8.8		55.1	12.5		9.5		32.7	49.3		9.3		58.0	42.6		9.2		30.0	23 6	
9.5		21.0	40.9		9.5		57.4	30.9		9.4		38.3	20.0		9.3	10	6.6	38.4		9.2	24	4.7	35.9	K
9.5		25.2	2.5		7.5		59.9	43.9	B	9.3		42.0	24.5		9.5		7.3	46.3		9.0		16.0	47.9	K
9.5		31.6	44.2		9.0	52	0.6	35.4		7.8		43.2	45.6	L	9.3		10.5	44.8		9.2		27.5	58.6	K
9.5		34.6	54.0		8.5		2.5	59.6	K	9.5		43 6	0.3		9.1		11.4	7.1		9.5		32.6	30.7	
9.4		38.8	21.5		9.4		6.9	9.0		9.5		50.8	36.3		9.3		22.0	17.9		9.2		46.0	9.4	
8.9		40.1	47.7		6.9		7.3	29.3	B	7.7		53.7	45.2	L	9.0		59.2	55.2	K	9.2	25	2.0	7.1	α
8.9		45.7	41.2		9.5		17.2	0.7		9.5	0	12.6	30.1		8.5	11	10.7	26.9	L	9.4		9.1	13.1	
8.7		50.1	14.9		9.4		19.7	56.7		9.0		28.0	37.5		8.6		12.0	18.5		7.5		10.4	55.8	K
8.5		58.6	59.9	K	9.5		45.0	31.4		9.3		35.0	13.5	b	9.0		18.5	12.2	K	9.5		23.7	48.4	
9.2	45	28.5	45.7	K	9.5		47.8	39.9	α	9.0		35.0	52.1		9.5		35.6	32.0		9.5		31.7	30.2	
10pr.		+ 34.37	− 0.60		10pr.		+ 34.34	− 0.72		10pr.		+ 34.31	− 0.83		10pr.		+ 34.27	− 0.96		10pr.		+ 34.21	− 1.11	

1336ᵃ

9.5	42	3.1	42.8	α

1601—1660					1661—1720					1721—1780					1781—1840					1841—1900				
	7°		+15°			7°		+15°			7°—8°		+15°			8°		+15°			8°		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	25	34.0	8.2		9.5	39	26.9	10.0		8.8	51	5.3	12.3		9.4	4	30.4	19.6		8.9	24	9.2	4.5	Kb
8.6	26	7.3	3.8		9.0		47.8	49.2		8.1		8.8	46.0	B	9.3		34.5	32.0	b	7.5		35.0	45.1	K
9.0		13.0	6.6		9.5		51.8	0.7		9.0		26.5	28.3		8.7		49.8	0.5		9.5	25	7.7	6.8	
9.3		22.1	46.6	K	9.4	40	0.7	49.8		9.5	52	2.1	25.2		9.5		55.4	0.2		9.5		21.4	39.6	
8.5		24.9	57.3	K	8.9		13.1	33.6	B	9.5		34.8	28.6		9.5	5	22.0	45.0		8.2		40.1	10.0	Kb
9.2	27	2.9	14.9	K	9.5		17.8	12.6		9.0		37.2	2.5	B	9.5		28.0	52.7		9.5	26	36.0	57.4	
9.4		9.8	14.7		9.3		18.7	55.7		9.3		41.5	1.1		9.4	6	42.4	5.1.4		9.4		39.0	35.1	
9.2		39.5	53.3	K	9.5		27.9	50.6		9.4		53.5	5.4		9.5	7	5.0	50.3		9.2	27	3.9	19.2	b
9.1	28	1.4	54.8	K	9.5		39.2	12.6		9.5		57.5	9.3	B	9.5		25.3	5.0		9.5		16.4	43.0	
9.3		2.1	17.6		9.5	41	12.8	55.0		9.5	53	2.0	57.2		9.3		49.2	42.7	K	9.0		28.8	7.3	
8.8		47.6	12.9		9.5		14.7	8.2		9.0		41.6	57.6	K	9.5	8	25.0	26.4		6.5		58.5	48.3	L
9.4	29	31.0	39.8		7.4		33.8	28.0	B	9.3		55.8	45.4	K	8.9		53.7	44.4	K	9.5	28	27.4	47.0	
9.0		38.7	23.4	K	8.5		47.3	3.5		8.7	54	19.3	34.0	K	9.5	9	15.0	56.3		9.5		36.7	14.0	
9.5		45.2	2.5		9.0	42	1.0	5.0		6.8		32.8	21.0	K	9.3		24.0	45.4	K	9.5		36.9	31.3	
9.4		57.1	39.3		9.3		2.0	50.8	b	9.5		48.4	2.8		9.5	10	57.5	33.7		9.2		40.5	34.1	K
9.0	30	8.7	23.2	K	7.3		21.1	12.3	L	9.5		57.3	36.3		8.7	11	3.2	29.2		9.3	29	48.6	31.9	K
9.4	31	16.1	53.0		9.5		43.5	46.4		9.5	55	16.5	48.7		9.5		42.6	54.0		9.5		51.8	29.3	
9.5		36.6	3.4		9.4	43	4.8	26.9		9.2		30.2	54.5		9.5		49.7	45.7		8.0		53.5	37.5	K
9.1		40.2	39.6	K	9.5		17.9	18.6		9.0		35.8	30.4		9.2	12	1.3	54.4	K	9.0		58.5	39.3	K
9.1		44.7	56.0	K	9.5		23.8	47.4		9.5	56	8.8	18.3		9.0	13	2.0	9.9		9.4	30	9.2	11.6	
9.5	32	1.0	21.2		9.5		37.1	10.2		9.4		14.9	46.1	a	9.5		17.9	34.1		9.1		20.0	48.4	
9.3		8.5	51.8	K	9.5		39.8	37.0		8.8		23.5	47.8		9.0		20.9	26.4	K	7.5		22.9	22.4	Kb
9.5		14.1	26.3		9.5		47.2	40.8		9.5		40.5	47.1		9.3		33.8	3.4	Kb	9.5		40.5	54.8	
8.7		56.0	40.0	K	9.4		50.4	12.8		8.5	57	4.6	9.8	K	9.0		44.9	4.3	K	9.5	31	43.0	43.8	
9.5	33	13.1	42.1		9.5	44	8.6	58.0		9.0		16.9	44.5	K	7.2		49.7	13.4	K	9.5		51.9	48.9	
9.3		15.7	59.1		9.5		24.8	35.3		9.5		26.8	41.1		9.0		59.0	12.7		9.5	32	14.9	40.8	
7.8		32.3	54.3	K	9.3		24.8	1.3		9.2		47.5	8.6		8.9	14	2.2	54.2		9.5		22.5	53.4	
9.4		58.0	46.3		7.4		52.9	45.3	K	9.5		57.0	55.8		8.6		16.5	27.1		9.5		46.0	56.2	
9.2	34	0.1	49.3	K	8.0	45	1.7	58.2	L	7.8		57.7	44.6	K	8.5	15	9.9	44.8	K	9.5		54.0	24.8	
9.5		10.6	3.1		7.8		7.8	16.6	K	9.5	58	19.8	20.3		9.2		16.2	35.6	K	8.5	33	12.5	10.6	K
9.5		18.2	59.3		8.8		13.8	13.4	K	8.5		47.4	33.9	K	9.1		50.0	29.3	K	9.5		30.9	21.1	
9.5		18.4	5.0		9.5		20.5	53.7		9.5		48.2	9.5		9.5	16	2.0	53.6		8.7		31.4	54.4	K
9.0		29.5	36.5	K	9.3		27.0	40.2		9.3		52.9	31.8	K	9.0		13.5	27.5	Kb	9.5	34	7.9	36.7	
9.5		29.8	39.3		9.5		35.5	58.6		9.5	59	20.6	38.3		9.2		56.4	28.2		9.5		17.9	37.4	
8.7		33.5	25.2	K	9.3		39.6	14.2	K	9.0		22.9	23.5	K	9.5	17	18.9	29.6		9.4		42.0	56.2	
9.0		44.7	8.8		9.3		40.5	34.3		9.0		39.8	53.3		9.5		22.2	57.9		9.5		54.2	28.5	
9.5		52.3	37.2		8.5		50.9	18.3	K	9.5		48.1	5.9		8.7		23.7	36.3	K	9.5		56.5	0.5	
9.5		55.3	4.0		9.3	46	3.4	19.0	B	9.0		57.0	57.2		9.5	18	20.2	19.5		8.8		56.5	42.6	B
9.3	35	19.3	31.1	K	9.5		22.4	18.5		9.0	0	6.3	18.6	K	8.6		23.0	10.9	K	9.3	35	30.4	12.0	
9.3		21.2	5.1		8.5		28.9	47.6	L	9.0		9.5	24.5	K	9.3		39.4	24.3	K	9.0		38.2	14.9	
9.3		29.9	40.1	K	9.3		35.5	25.6	K	8.5		12.9	16.7	K	9.0		42.9	42.4		9.5		41.4	52.0	
7.7		39.9	35.9	K	9.3		44.9	47.0		9.5		22.5	14.1		8.5		47.9	17.1	K	9.5		44.9	2.1	B
9.5		53.3	52.2		9.0		52.8	36.3	K	9.5		45.1	12.7		9.5	19	20.0	24.0		9.4		45.5	5.0	B
9.2	36	24.4	32.4	K	9.5	47	11.0	10.6		9.3		50.5	5.8	K	9.5		44.4	44.0		9.0		59.1	58.1	
8.8		30.8	47.8		9.1		57.8	28.0	K	9.5		52.7	36.0		8.2		46.9	34.0	Kb	9.4	36	11.5	53.8	
9.5		49.8	28.9		8.5	48	38.3	31.4	K	9.5		55.5	32.5		9.5		57.7	2.6		8.5		33.0	25.7	
9.5	37	0.4	33.1		8.5		42.3	21.1	K	9.3	1	31.9	25.4	K	9.5	20	9.4	51.5		9.5		44.0	37.2	
9.5		5.8	16.4	?	9.3		50.9	54.1		9.2		44.3	11.3	K	9.4		33.0	3.8		9.5	37	3.0	54.7	B
9.3		8.2	16.4	K	9.5	49	9.6	45.0	B	9.5		48.1	5.4		9.5	21	10.8	6.3		8.0		5.0	51.4	K
9.5		26.5	38.7		9.3		17.3	26.5	K	9.5	2	4.8	21.3		9.5	22	1.9	55.6		9.0		6.6	54.6	B
9.5		29.4	5.6		9.3		30.5	38.3		9.5		5.2	15.0		9.4		27.3	44.2	B	7.8		13.0	33.4	L
9.5	38	9.2	50.9		9.5		46.3	3.4		9.4		9.7	34.5	B	9.5		40.3	42.2		9.5		14.1	54.6	B
9.5		17.0	5.8		9.0	50	0.3	32.5		9.5		41.2	31.6	B	9.5		51.7	53.0		9.5		38.5	11.0	
9.5		24.4	23.4		9.3		0.9	55.9		9.5		45.8	40.8	B	9.5	23	2.2	13.3		9.3		47.5	44.4	K
8.3		38.1	51.2	B	9.5		9.8	11.3		6.3		50.3	3.6	K	9.0		24.5	27.5		9.5		50.7	37.5	
9.3		42.3	46.6		9.5		28.4	16.5		9.5	3	7.5	15.0		9.5		26.4	49.4		9.5	38	13.8	7.0	
9.5		53.7	7.5		9.2		34.1	3.3		9.5		30.1	45.3		8.8		31.1	55.0	K	9.5		22.0	4.3	
9.5	39	0.6	14.9		9.4		41.9	51.7		9.5	4	11.4	12.6		9.5		41.5	0.1		9.3		37.0	31.9	
8.0		8.1	52.3	L	9.4		52.9	15.2		9.5		18.0	6.4		9.2	24	1.9	31.0		9.2		44.0	12.2	K
9.0		17.7	44.5		9.5	51	0.0	58.4		8.5		27.5	0.3		8.3		7.8	48.6	K	9.5		44.4	47.1	
		+	—				+	—				+	—				+	—				+	—	
10pr.		34.12	1.33		10pr.		34.04	1.48		10pr.		33.94	1.65		10pr.		33.80	1.87		10pr.		33.63	2.07	

1901—1960					1961—2020					2021—2080					2081—2140					2141—2200				
	8ᵘ		+15°			8ᵘ—9ᵘ		+15°			9ᵘ		+15°			9ᵘ		+15°			9ᵘ—10ᵘ		+15°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
7.5	39	11.9	51.6	K	9.5	53	58.9	55.3		9.3	11	30.8	58.7		9.5	28	41.8	32.9		7.7	50	18.4	55.2	K
9.0		34.9	18.5	K	8.7	54	1.9	9.8	L	8.9		37.2	54.2	K	9.5		42.8	6.2		9.5	51	7.5	52.4	
9.5		45.2	15.0		9.5		11.2	18.6		9.2		44.4	59.0	K	8.5	29	21.4	53.5	K	9.4		16.2	6.1	
9.0		49.5	45.8	K	9.5		37.7	14.0		9.5		53.8	15.3	*b*	9.2		23.3	59.5	K	9.5		24.7	27.1	*aB*
9.0	40	0.0	36.2	K	9.5		39.6	1.5		9.5	12	11.3	16.3		9.3		55.5	51.9	K	9.4		48.6	42.5	*aB*
8.5		4.5	37.5	K	9.4	55	6.5	47.7		9.5	13	11.8	43.0		9.5	30	4.5	5.2		8.9	52	1.2	34.3	K
9.2		17.0	24.4		9.5		18.3	32.5		6.7		14.2	58.9	K	6.8		6.7	0.1	*Kb*	9.2		27.6	9.3	
9.5		28.0	32.8		9.5		57.8	40.6		9.2		52.4	35.7	B	9.5		27.3	37.8		9.5		30.6	53.7	
9.5		37.0	46.5		9.0	56	8.2	1.9	K	9.3	14	0.6	47.1	*aB*	9.5		42.5	49.6		9.5	53	10.5	23.9	
9.5	41	32.5	47.6		9.5		24.2	25.5		9.3		17.4	44.1		9.5		43.0	22.5		9.5		11.5	13.5	
9.5		41.0	31.8		9.2		34 8	26.1	K	8.7		24.3	30.5	K	8.5	31	7.7	4.1	K	9.5		28.0	13.2	
7.0		51.9	22.6	*Kb*	9.3		43.9	51.0	K	9.0		30.0	30.9		9.5		8.3	30.9		9.4		48.8	9.3	
9.5	42	16.4	50.7		9.0		44.8	57.4	K	9.3		36.8	11.0	K	8.7		10.8	55.8	K	9.5	54	16.5	40.6	
9.5		28.0	1.9		9.0	57	1.9	45.9	K	9.3	15	20.4	56.3		9.5	32	3.7	43.8		9.5		27.1	47.6	
9.5		45.0	27.5		8.9		33.3	22.8		9.3		22.7	47.3		9.5	33	14.7	57.8	*aB*	9.1		36.1	19.5	*aB*
9.4		46.5	55.0		9.0	58	12.4	4.6		9.5		29.0	52.5		9.3		36.9	46.2	K	8.0		36.6	17.0	L
6.7		56.8	53.3	K	8.1		19.2	51.2	*Kb*	9.5		49.7	35.7		9.2		44.4	55.0	K	8.2		44.7	1.7	*Kb*
9.5	43	14.7	27.5		9.5		30.3	43.5	*a*	9.2	16	0.8	6.3	K	8.6	34	21.3	25.3	K	8.8		49.6	30.2	
9.5		43.5	37.8		9.5		32 3	56.7		9.4		11.9	50.0		9.5		28.6	27.4		9.5	55	2.2	6.7	
9.5		46.8	3.5		9.5		34.1	4.2	*B*	9.5		33.8	28.8		9.5		54.5	45.5		9.5		39.4	59.3	
9.5	44	0.2	56.6		8.1		43.2	48.4	K	9.4		41.7	39.1		9.5	35	21.4	40.1		9.5		46.5	34.4	
9.5		0.9	6.3		9.1		48.3	41.3	K	9.4	17	3.8	39.2		9.5		36.5	49.2		9.4	56	32.5	22.0	B
9.5		1.7	20.6		9.1	59	45.3	15.0	K	9.1		9.1	26.9	K	8.9		54.0	11.7	K	9.5		56.6	53.7	
9.0		4.0	50.3		7.5	0	8.3	17.5	K	9.5		15.2	21.2		9.5	36	10.6	34.8		7.8	57	12.7	50.7	K
9.4		26.5	55.0		9.2		25.1	6.2		9.5	18	4.1	57.4		9.5		34.6	9 3		9.3	58	47.8	8.9	B
9.5		50.4	3.3		8.5	1	11.7	50.3	K	9.0		38.7	44.7	K	9.5	37	22.6	37.5		9.5	59	6.3	27.1	
8.5		51.7	22.0		9.3		19.0	54.4	K	9.5		41.1	54.2		9.0		37.7	32.0		7.5		49.0	52.8	K
9.5	45	40.0	33.5		9.0		31.2	46.6	K	8.2		49.3	33.7	K	9.4		54.8	53.7	*B*	8.8	1	34.0	56.0	K
9.5		48.5	39.9		9.3		52.0	57.2	*a*	8.0		51.5	8.3	K	9.5		58.6	36.4		9.1	2	5.3	44.2	*b*
8.8		52.0	22.6		8.5		55.1	2.7		9.4	19	12.6	57.6		9.5	39	48.3	29.9		9.5		13.0	36.9	
8.9		53.5	5.6		9.5	2	22.9	41.0		9.3		12.7	9.6	*Kb*	9.5	40	6.9	23.2		8.5	3	6.3	12.3	L
9.5	46	19.4	16.0		9.3		51.3	46.5		9.0		44.7	1.2	*a*	9.5		39.5	31.5		9.5		57.2	50.4	
9.5		23.0	20.9		9.5		55.3	32.6		9.5		51.7	19.1		9.3	41	10.9	35.8		9.5	4	11.2	50.7	?
8.5		45.5	18.6	K	9.5	3	3.8	49.2		9.5	20	7.8	25.0		8.2		14.0	16.7	K	9.0		13.7	35.2	*Kb*
8.8		47.8	2.7		9.5		13.7	7.2		8.5		26.6	48.3	K	8.2		18.9	37.5	K	9.4		35.1	6.9	B
8.1		56.5	16.5	K	9.5		25.9	28.8		9.5	21	0.7	54.9		9.3		36.3	12.8	K	9.5	5	7.0	14.7	*aB*
9.5	47	18.9	24.0	B	9.3		36.7	41.2		9.5		23.2	7.7		8.5		58.7	34.1	K	9.3		24.9	53.1	R
9.5		27.4	45.3	B	9.5		40.0	46.8		9.4	22	16.4	50.7	*aB*	8.3	42	2.7	14.1	K	9.5		46.0	26.9	
9.5		39.4	59.0		9.1		46.4	4.5	*Kb*	9.5		17.5	16.7		9.5		38.9	24.0		9.0	6	13.4	57.9	
9.5		44.5	41.6		9.5	4	6.9	42.9		8.9		29.7	54.4	K	9.5	43	7.5	48.3		9.4		28.9	48.0	
9.4		52.9	17.3	B	9.5		7.8	32.5	*aB*	8.6		30.8	33.9		9.4		18.8	0.6		9.5		44.2	2.0	
9.5	48	7.5	45.2		9.3		20.3	19.4	*a*	8.2		36.6	54.4	K	9.5		42.3	38.1		9.5	7	2.1	27.9	*b*
9.5		27.1	59.0		7.0		23.0	34.6	*Kb*	9.5	23	38.5	38.6		8.9	44	18.0	9.7	K	9.5	8	3.2	7.5	
8.8		41.2	39.0	K	9.0	5	10.4	21.5	K	9.4		44.0	37.1		9.5		46.8	5.1		9.1	9	7.3	3.3	*b*
5.7	49	9.9	52.5	*Kb*	9.5		25.3	38.4		9.5		54.6	1.4		9.0	45	37.1	24.3	K	9.5		34.6	44.2	*aB*
9.5		55.9	28.2		9.5		52.2	33.3		9.5	24	17.1	52.8		9.4		44.3	0.5		9.3	10	21.4	32.0	*Rb*
9.4	50	2.1	38.3		9.4	6	42.6	31.9		9.5		25.3	12.9		7.8		53.9	25.3	K	9.5	11	26.9	32.6	
9.5		8.4	4.7		9.5	7	4.6	22.6		9.2	25	0.3	1.9	*Kb*	9.5	46	2.3	47.6		8.5		29.2	23.4	K
9.2		32.9	56.7	K	5.8		13.3	32.6	L	9.5		36.0	21.1		9.5		8.2	38.3		8.7		53.1	23.4	K
9.5		35.7	44.8		9.2		32.7	17.7		9.5		41.9	42.3		9.5		16.0	47.6		9.2	12	4.4	39.8	R
9.2		40.3	35.9		8.5		53.5	37.4	K	9.1	26	24.8	13.6	K	9.5		59.1	10.3		9.5		41.2	5.8	
9.2	51	38.8	41.0		9.0	8	0.3	30.3		9.3		28.3	30.2		9.5	47	48.3	28.8		6.3	14	3.3	42.3	*Kb*
8.5		47.7	42.8	K	8.5		10.7	42.4	K	9.5		31.9	52.0		9.5		54.9	18.3		9.5		36.2	12.2	
9.3	52	29.7	25.4	K	9.5		14.6	2.3	*aB*	9.2		48.0	4.3	K	9.5	48	23.6	25.4	B	9.5	15	15.8	16.8	
9.5		59.2	44.8		9.3		52.9	58.1		8.7	27	36.5	28.8	K	8.8		35.0	26.0	K	8.7		59.8	35.1	K
9.4	53	10.8	22.2	*aB*	9.5	9	8.8	59.0		9.5		49.5	58.8	*aB*	7.8		46.3	26.0	K	9.1	16	46.6	53.2	R
8.7		15.2	51.2	K	9.5		12.5	53 9		6.8		57.7	1.4	*Kb*	9.3		54.8	28.5	*aB*	8.5	18	34.1	38.9	K
9.3		17.6	53.9	K	9.5		49.4	5.8		9.3		59 6	1.8	K	9.5	49	16.6	45.1		9.5		59.4	31.7	
9.3		24.9	51.2	*aB*	9.5	10	42.8	26.0		9.0	28	15.4	15.4	K	9.5		28.5	26.0		9.3	19	20.1	0.9	
8.1		27.2	45.8	K	9.3	11	5.2	1.1		9.1		20.3	14.5	K	9.0		52.6	44.8	K	9.5		20.7	54.4	
		+	—				+	—				+	—				+	—				+	—	
10pr.		*33.50*	*2.21*		*10pr.*		*33.31*	*2.38*		*10pr.*		*33.11*	*2.55*		*10pr.*		*32.85*	*2.74*		*10pr.*		*32.54*	*2.91*	

2201 — 2260

m	10ᵘ	+15°	
9 0	19 30.4	35.4	
9.5	48.9	46.9	
9.0	20 5.2	0.7	K
9.5	39.2	51.8	
7.7	39.6	30.6	K
7.2	21 3.0	5.8	Kb
9.4	13.7	6.7	
9.0	22 0.8	25.8	R
9.2	5.0	54.9	αB
9.3	26.9	3.7	
9.4	44.0	55.8	αB
9.4	23 1.9	36.2	b
9.5	6.8	20.2	
*9.5	49.1	25.6	αB
9.4	51.2	55.1	ft
9.4	24 20.9	2.6	α
9.0	27.5	34.7	
9.0	25 3.4	22.3	R
8.7	44.8	39.2	K
8.7	46.5	57.8	S
9.3	26 40.4	36.2	
9.5	27 14.7	6.0	
9.0	25.9	21.6	K
8.2	28 36.5	32.6	B
8.8	29 7.9	56.0	B
8.9	25.8	18.2	B
8.8	47.9	54.1	B
9.0	49.8	48.9	
8.5	30 7.0	45.4	
8.9	36.9	1.2	K
9.3	31 19.9	3.5	
8.0	25.6	30.4	K
9.4	29.1	30.7	αB
9.5	37.9	14.1	
9.5	32 19.3	17.0	
8.2	40.8	42.2	Kb
9.5	55.0	50.8	
9.5	35 30.3	50.5	
9.5	36 3.3	26.6	
9.5	25.1	58.5	
9.4	28.2	24.4	αB
9.4	35.1	59.5	αB
9.5	36.0	5.2	
9.3	37 47.7	43.9	b
9.5	39 16 8	6.4	
9.3	26.2	0.0	K
9.4	51.8	24.3	
9.4	41 20.7	33.0	
9.1	25.3	26.8	K
9.3	48.8	48.9	
8.2	42 14.5	3.2	K
9.5	39.7	5.6	
9.3	43 38.4	36.8	K
9.5	41.0	55.2	
9.5	44 15.2	17.1	
9.5	26.5	32.4	
8.7	45 11.7	30.8	K
9.1	37.7	51.9	
9.1	38.2	50.3	
9.0	46 58.1	45.4	R
	+	—	
10pr.	32.13	3.10	

2261 — 2320

m	10ᵐ—11ᵐ	+15°	
8.2	47 4.5	58.1	B
9.3	39.8	12.5	
9.5	53.8	16.4	
9.5	48 32.2	6.6	
9.5	49 24.3	25.3	
9.4	50 5.8	0.6	
8.2	16.2	14.2	K
8.8	21.0	40.2	
9.5	27.0	9.3	
9.2	54.1	11.0	Kb
9.5	51 1.8	47.9	
9.5	9.6	51.4	
9.5	15.7	13.7	
9.5	31.0	53.2	
9.5	52 30.8	20.5	
8.0	53 47.1	47.9	K
8.8	54 22.2	24.7	K
9.5	55 28.7	11.7	
9.5	35.7	15.3	
9.5	56 4.6	53.4	
9.3	1.2	24.9	
8.1	36.1	1.5	Kb
8.0	42.2	31.0	B
9.5	57 45.2	39.7	
9.5	58 24.0	6.5	
9.5	36.0	31.7	
9.5	36.9	6.0	
8.8	51.3	3.9	K
8.9	56.2	49.0	K
7.5	59 4.3	57.9	Lb
9.0	35.2	48 5	K
9.5	36.2	12.3	
9.5	0 30.2	46.5	
8.0	1 18.2	59.4	K
8.5	2 5.1	55.1	L
9.5	16.1	5.3	
8.5	20.2	29.9	L
9.3	43.7	50.0	
9.5	55.7	45.4	B
9.5	3 28.4	10.1	
6.8	4 6.8	11.2	K
*8.5	28.1	5.8	K
*9.3	42.7	41.3	
9.3	5 9.7	31.4	Kb
9.3	34.1	57.8	
9.4	56.7	29.3	
9.2	57.6	59.0	K
9.5	6 16.7	14.4	
9.5	32.5	33.4	
9.5	47.2	45.9	
8.2	7 49.4	54.8	K
9.4	8 20.4	30.1	
9.5	27.0	4.9	
9.2	9 5.5	33.8	K
9.1	5.6	50.6	K
8.5	32.1	48.9	K
9.4	47.7	59.2	
9.5	10 36.6	6.6	
9.3	45.1	8.6	
9.5	11 3.7	52.6	
	+	—	
10pr.	31.69	3.23	

2321 — 2380

m	11ᵘ	+15°	
7.4	11 24.4	4.2	Kb
9.5	12 3.3	49.7	
9.5	49.0	33.3	Bb
9.5	14 1.3	1.2	
9.4	50.2	14.3	
8.1	15 19.5	7.3	Kb
9.4	20.8	52.1	
9.5	30.7	40.5	
9.5	46.4	13.6	
9.5	16 58.9	44.7	
9.3	17 23.4	15.2	
9.5	18 37.7	0.3	
9.5	20 11.2	20.4	
9.3	19.3	57.3	
9.0	24.2	38.0	Lb
9.0	21 34.5	59.0	K
9.1	37.4	55.7	K
9.5	46.5	25.5	
9.5	22 17.4	46.3	αB
9.4	21.8	40.9	B
9.5	54.5	39.8	
9.4	58.5	3.6	
9.5	23 6.1	37.9	
9.5	24 12.6	29.9	
6.4	16.0	10.9	Kb
9.1	26 14.9	17.5	K
9.3	26.3	33.8	
8.5	35.7	41.9	K
8.6	45.2	29.5	K
9.4	27 29.6	44.2	
9.5	28 29.7	34.5	B
8.3	43.7	29.8	K
9.3	29 20.5	31.0	K
9.2	40.6	45.3	
9.3	55.9	21.1	
8.8	30 14.7	56.7	Kb
9.0	39.1	22.2	L
9.0	31 12.8	28.2	K
9.5	14.8	24.5	
9.5	41.0	24.9	B
9.2	56.3	11.0	
9.3	59.5	5.4	Rb
9.5	33 24.7	9.1	
9.2	47.5	23.6	b
9.1	34 25.6	20.2	b
9.3	41.0	32.5	
9.5	35 3.8	0.8	
9.5	36 13.8	11.9	
9.5	46.0	34.5	
9.2	49.1	46.4	R
9.3	55.9	22.5	
9.3	37 1.3	24.6	R
9.5	19.7	33.4	
7.4	42.6	4.2	K
9.5	38 22.8	24 0	
9.0	25.6	49.8	K
8.7	39 3.6	46.3	K
8.0	22.2	48.4	K
9.1	57.1	23.0	αRb
9.5	40 19.8	37.6	
	+	—	
10pr.	31.23	3.31	

2381 — 2440

m	11ᵐ—12ᵐ	+15°	
7.0	41 10.9	5.6	K
8.2	30.2	18.8	K
2.0	40.4	22.6	K
9.5	42 45.7	5.1	
9.2	44 15.8	38.9	b
*9.3	51.3	3.7	α
*8.5	57.5	15.9	K
9.0	45 10.0	1.3	
9.5	17.1	51.1	
9.2	22.0	10.8	
9.5	46 27.6	55.8	
9.5	47 25.1	7.3	
8.9	41.8	11.8	L
9.3	44.3	28.7	αB
8.4	54.8	56.0	K
9.5	48 18.3	52.0	αB
9.5	40.0	2.5	
9.3	45.8	21.4	
9.0	49 39.1	59.4	Kb
9.5	55.5	50.1	αB
9.3	53 36.5	50.5	
9.5	50.5	31.0	
9.2	54 26.1	44.1	
9.4	55 15.0	23.0	αB
8.6	23.3	36.0	K
9.3	26.6	53.2	
9.5	56 43.2	56.3	
8.5	57 48.5	40.5	K
9.5	58 20.4	4.5	
9.2	33.1	27.8	
9.5	59 14.7	4.5	
9.2	47.8	54.5	K
9.5	0 18.8	56.3	
9.3	35.2	9.6	
9.5	43.2	59.7	
9.2	1 0.6	56.5	
9.1	23.0	51.1	R
7.5	51.1	38.6	K
9.4	2 18.9	40.0	
8.5	50.6	20.3	L
9.5	3 28.8	48.9	
8.3	35.7	13.5	K
9.0	4 11.6	26.4	
9.2	18.4	41.5	R
9.2	56.8	38.5	
9.5	59.7	57.0	
9.0	5 27.9	19.6	K
9.5	39.9	59.7	
neb	6 25.2	43.0	
9.3	7 17.0	27.7	
9.5	30.0	55.5	
9.0	36.6	4.3	
9.5	53.5	22.3	
9.5	8 3.1	58.8	
9.1	33.2	52.1	K
5.1	38.5	43.5	Kb
9.5	9 9.4	7.5	
9.5	17.5	36.2	R
9.3	32.2	38.6	R
9.5	10 7.7	57.6	
	+	—	
10pr.	30.74	3.34	

2441 — 2500

m	12ᵘ	+15°	
8.2	10 14.7	14.7	L
7.0	21.6	57.3	K
8.3	29.6	50.1	K
9.5	11 26.9	37.4	
7.0	59.1	21.6	K
8.6	12 29.0	11.0	K
9.5	32.2	47.5	
9.3	47.7	51.3	
9.5	13 5.0	52.4	
9.5	17.6	12.6	
8.8	18.5	56.7	K
9.5	47.3	50.2	
9.3	57.0	33.8	B
9.0	14 34.2	39.1	K
9.5	38.2	40.2	
9.3	50.3	1.0	
9.5	15 9.1	11.9	
9.5	16 19.8	44.6	
9.0	27 4.4	18.5	
9.2	47.4	12.2	B
9.5	56.0	40.3	
9.5	58.8	27.8	B
8.0	19 9.7	22.9	K
9.5	16.2	55.3	
9.5	58.2	15.6	
9.5	59.6	55.6	
9.0	20 23.5	3.6	B
9.5	22 0.9	54.0	
7.5	27.6	27.4	K
9.5	23 3.6	31.0	
8.8	24 8.2	23.4	K
9.5	39.0	15.1	
9.4	44.7	7.2	
9.2	25 34.8	28.8	
9.3	26 11.1	41.1	
9.1	17.8	54.4	b
9.5	41.4	29.4	K
8.6	27 3.1	26.6	K
9.5	37.5	17.6	B
9.3	28 3.4	3.9	
9.5	29 34.8	55.7	
9.5	42.6	47.4	
8.5	42.9	3.2	Kb
9.5	30 21.8	35.7	
9.5	41.8	23.7	
9.4	57.4	10.8	
9.5	31 3.6	25.6	
7.2	9.3	40.2	K
9.5	38.0	8.6	
9.5	38.5	5.3	
8.2	52.2	8.6	Kb
9.3	32 21.3	4.1	
9.5	33 51.3	26.8	
9.2	34 20.9	8.7	
9.0	56.9	19.6	
9.5	35 32.2	16.1	
9.5	34.8	50.5	
9.5	36 21.7	55.9	
9.5	23.8	19.2	
8.7	35.3	54.8	Kb
	+	—	
10pr.	30.34	3.32	

2214ᵃ				
9.5	23	50.2	55.8	R

2302ᵃ				
9.7	4	35.7	2.1	B

2386ᵃ				
9.6	44	54.2	13.1	

2501—2560

	12°—13°	+15°	
m	′ ″	′	
9.5	37 15.2	51.4	
9.2	16.3	3.0	
8.5	38 10.1	9.5	K
8.0	11.2	9.7	K
9.5	27.9	52.8	
9.4	37.1	20.7	
9.4	41.1	13.0	
9.3	39 13.4	18.5	
9.5	40 57.5	51.4	
9.5	41 31.1	34.0	
9.2	41.7	58.2	Bb
8.6	44 10.2	39.5	K
9.5	14.7	37.7	
9.2	57.6	44.4	
8.2	45 43.2	49.4	K
9.5	46 50.7	19.4	
9.1	47 4.0	13.0	b
9.5	37.5	13.2	
9.5	49 12.6	33.7	
9.5	29.4	55.8	
9.5	50 26.9	27.7	
9.5	54.2	25.6	
9.1	51 20.2	52.2	b
9.5	24.5	28.1	
8.7	56.7	41.1	K
9.5	52 3.0	14.1	aB
8.8	15.2	31.2	K
9.5	28.9	7.7	
9.3	31.9	29.1	
9.0	44.3	3.9	
8.3	53 33.5	9.3	K
9.5	45.9	58.3	
9.5	54 52.1	58.3	
9.5	55 43.0	59.2	
8.8	56 13.6	34.0	
9.5	48.9	34.4	
9.5	57 3.2	31.7	
9.5	25.0	48.8	
9.3	36.2	30.5	a
9.5	38.0	48.2	
7.9	58 18.4	30.5	L
8.5	47.9	36.5	K
9.5	59 1.2	20.8	
9.5	25.2	49.2	
9.1	43.4	3.7	b
9.5	1 22.5	5.1	
9.5	2 58.8	20.1	
9.5	3 0.0	55.7	
9.5	20.5	23.9	
9.5	47.2	21.1	
8.8	4 19.7	5.8	
9.2	43.2	28.7	b
9.3	46.2	26.1	
9.5	6 52.2	43.2	
9.5	8 16.9	47.2	
9.3	29.5	26.9	
8.5	36.4	43.8	K
8.3	9 9.3	47.5	Kb
9.5	43.6	30.3	
9.0	48.4	14.3	K
10pr.	28.87	3.24	
	+	—	

2561—2620

	13°	+15°	
m	′ ″	′	
8.7	11 50.9	14.8	K
9.5	12 0.5	55.4	
9.1	0.6	3.9	
9.5	13 1.8	59.6	
9.5	14 8.7	6.6	
9.5	15 40.5	44.0	
9.1	17 20.3	59.0	b
8.9	31.2	13.3	L
9.5	31.5	45.0	
9.5	32.2	33.6	
9.4	38.5	42.5	
9.5	57.5	31.2	
9.2	18 22.9	53.6	
9.5	29.7	9.5	
9.1	54.2	29.7	b
8.5	59.6	6.2	K
8.8	19 9.2	20.8	
8.3	45.7	8.7	K
8.7	52.9	50.7	
9.5	22 1.4	46.7	
8.2	7.9	34.2	K
9.5	23 17.1	4.8	aB
9.5	18.0	8.5	
9.4	30.4	54.8	
9.3	24 4.8	19.4	
9.5	26.5	55.8	
9.0	27.2	27.5	
8.8	25 0.3	55.3	
9.5	19.0	49.7	
9.1	21.8	13.0	Kb
*7.6	31.6	8.5	K
*9.5	55.0	56.1	
9.5	26 37.4	18.2	
9.5	59.4	38.5	
9.5	27 1.9	25.9	
9.5	25.0	54.0	aB
7.3	28 17.2	38.7	K
9.5	21.9	31.9	
9.3	31.2	36.4	
9.5	29 16.2	31.8	
9.4	58.6	15.1	aB
6.9	31 2.6	2.5	K
9.1	17.1	59.6	b
9.3	52.5	34.1	
8.6	32 20.5	28.5	K
8.8	33 41.8	18.8	K
9.5	54.9	36.5	
9.5	34 51.3	52.6	
7.6	35 30.0	53.3	K
9.5	49.2	57.5	
9.4	49.8	34.0	
9.5	50.2	8.7	
9.5	36 11.9	34.8	
7.1	34.9	6.2	K
8.9	37 4.2	42.2	
9.5	33.0	49.2	B
9.1	43.2	40.5	
9.2	47.3	10.1	
9.3	38 22.4	53.3	
8.5	23.3	40.7	B
10pr.	29.37	3.11	
	+	—	

2621—2680

	13°—14°	+15°	
m	′ ″	′	
9.4	38 28.6	13.7	
9.3	39 5.4	2.5	
9.5	5.8	47.2	
9.3	9.5	38.5	
8.4	11.9	40.3	K
9.2	34.2	56.0	
8.5	40 18.0	49.8	
9.3	53.4	44.7	
9.5	42 24.2	35.7	
9.4	38.2	50.7	
8.3	52.0	36.5	K
9.0	43 2.7	31.2	K
9.3	38.0	0.9	
9.3	56.4	38.0	
9.3	58.4	21.6	
9.5	44 40.0	0.9	
9.3	51.3	19.8	
9.4	45 11.2	3.5	aB
9.2	51.0	37.8	b
8.7	46 11.9	25.3	K
9.3	21.1	34.1	
9.3	51.3	32.7	
8.6	48 29.7	53.5	K
9.5	49 31.3	38.2	
9.2	46.8	25.5	b
9.0	46.9	9.0	K
9.3	50 4.0	5.8	Kb
9.3	9.8	45.2	
8.9	15.7	55.5	K
9.4	46.8	8.9	aB
6.7	51 40.2	22.5	K
9.5	46.3	12.2	
8.0	51.7	15.3	Kb
8.8	52 3.7	5.7	Kb
9.3	54 6.5	49.1	
9.4	7.7	7.2	B
9.1	55 43.4	12.0	
7.0	58.9	40.8	K
9.3	57 32.1	57.0	
9.5	36.0	2.9	
9.0	58 44.0	41.8	
9.3	59 2.8	3.7	
8.7	3.7	14.2	K
9.5	4.7	56.0	
9.5	49.0	29.0	
9.2	1 1.8	18.8	aB
8.7	32.4	42.1	K
9.5	2 0.8	38.8	
9.3	40.0	37.4	
8.5	41.5	5.7	Kb
9.3	3 11.0	58.4	
9.5	27.6	8.5	
8.8	28.5	5.0	
7.4	47.2	58.8	K
8.5	58.4	54.0	K
8.9	4 10.3	49.2	K
8.9	18.0	47.3	K
9.4	40.1	7.9	
9.0	46.5	29.7	Kb
9.3	6 15.2	26.6	
10pr.	28.99	2.96	
	+	—	

2681—2740

	14°	+15°	
m	′ ″	′	
9.3	6 20.8	33.5	
9.0	34.2	30.4	L
8.7	7 22.4	40.0	K
9.3	27.4	53.9	
9.3	42.2	4.1	
9.4	54.2	32.5	
9.5	8 10.0	7.7	
9.5	20.9	55.5	
9.5	9 3.2	3.9	
6.2	10 33.4	56.1	K
9.1	59.8	33.2	K
9.5	11 53.7	53.1	
9.3	54.2	54.2	
9.3	12 9.9	9.2	Kb
8.2	29.8	36.0	K
9.5	13 9.7	58.3	
8.8	46.4	34.2	K
9.0	14 27.8	34.2	K
9.5	47.4	52.5	
9.3	15 26.5	23.9	
9.2	36.6	8.1	
7.7	55.6	36.1	K
9.3	16 32.0	56.0	
9.3	36.4	1.6	
9.3	17 21.7	21.8	
8.8	21.9	40.1	Kb
9.3	57.9	7.9	
9.3	18 6.6	37.0	
9.3	7.9	42.2	
9.5	22.9	40.5	
8.7	19 13.7	0.5	Kb
9.3	20 13.4	56.0	
9.2	27.4	8.8	a
7.0	37.0	24.2	Kb
9.5	56.3	4.1	
9.3	21 2.4	47.0	
9.3	6.9	26.6	
8.9	21.4	8.0	
9.3	39.5	4.6	
9.4	51.5	24.8	aB
9.4	22 0.1	25.9	aB
9.1	40.8	18.7	L
9.5	40.9	46.3	
8.5	23 17.9	19.3	K
9.3	24 40.4	14.6	
9.2	54.7	53.6	Kb
9.3	25 23.4	28.4	
9.5	38.2	1.0	
8.9	27 6.9	22.5	K
9.5	28 3.7	54.9	
9.2	29 47.4	42.2	K
8.2	30 10.1	20.7	K
9.3	11.9	36.7	
9.0	28.4	13.1	
8.3	57.4	32.1	K
9.2	31 16.0	19.9	aB
9.5	30.7	25.7	aB
9.3	56.4	40.2	
9.1	32 0.8	5.4	K
9.3	8.0	22.9	
10pr.	28.61	2.75	
	+	—	

2741—2800

	14°	+15°	
m	′ ″	′	
9.3	32 39.3	16.3	
9.3	33 11.4	42.2	
8.5	53.4	15.9	
9.5	34 24.4	56.6	
9.5	35 0.4	28.4	
9.3	5.8	4.4	K
9.5	23.9	44.3	
8.7	50.9	58.1	
6.7	51.4	20.4	K
8.7	55.9	19.7	K
9.5	36 37.4	41.1	
8.6	37 0.5	0.5	
9.3	30.4	40.7	
8.8	48.9	17.3	K
9.5	51.4	21.1	
9.3	38 20.8	54.5	
8.3	58.4	15.6	
5.5	39 16.9	44.9	L
9.3	24.4	49.1	
7.6	26.5	7.5	L
9.4	28.1	22.5	aB
7.5	39.9	28.7	L
9.1	40 2.3	58.3	K
9.3	27.9	53.5	
8.9	33.4	11.8	K
9.3	36.9	7.0	
9.1	45.5	1.9	K
9.0	55.5	32.9	
9.5	41 18.9	40.0	
9.1	37.7	4.2	K
9.3	42 12.7	53.5	
9.3	13.1	15.9	
9.3	39.9	30.0	
9.3	43 12.9	19.7	
8.3	42.4	36.4	K
7.8	44 43.4	22.9	L
8.2	49.0	54.9	K
8.4	45 15.6	36.3	K
8.8	16.7	55.3	K
8.3	25.0	59.7	K
8.5	27.0	5.3	Kb
8.8	29.4	15.2	
9.2	46 3.2	47.3	K
7.2	8.4	43.3	K
9.5	39.4	15.3	
9.3	49.7	17.0	
9.5	47 3.7	32.2	
9.5	8.8	38.8	
9.5	28.7	16.7	
7.5	48 1.9	55.0	K
9.5	2.0	0.7	
7.2	12.2	34.3	K
8.7	21.3	52.3	K
9.5	49 6.6	54.8	
9.1	18.1	5.9	K
6.2	24.1	2.4	K
9.4	50 32.0	8.9	B
7.7	58.7	40.8	K
9.0	51 26.7	3.0	
9.5	42.3	43.3	
10pr.	28.32	2.54	
	+	—	

2591st
9.6 | 25 41.7 | 15.1

2801 — 2860					2861 — 2920					2921 — 2980					2981 — 3040					3041 — 3100				
	14°—15°		+15°			15°		+15°			15°—16°		+15°			16°		+15°			16°		+15°	
m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′		m	°	″	′	
9.5	52	6.0	1.0		9.3	19	26.8	24.6		8.5	45	14.0	17.4		9.5	13	58.5	7 6		8.6	36	32.6	53.6	K
8.2		15.0	39.2	K	8.0		36.2	13.2	K	9.0		21.2	29.3	B	9.0	14	44.9	31.8	K	8.0		34.8	6.2	B
7.2	53	9.2	25.4	K	9.2		56.5	20.5	K	8.0		21.5	39.7	K	9.2		46.6	46.3	B	8.5		53.7	45.5	K
9.4		25.9	1.2	Kb	8.4	20	22.2	4.9	K	9.5		31.6	12.0	B	9.5	15	13.3	42.5		8.7	37	6.9	48.9	K
9.5	54	41.3	45.4		9.2		43.8	43.3	K	7.5	46	17.5	52.5	K	9.5		35.8	7.6		9.2		54.1	11.8	b
9.0	55	1.7	41.2		9.4		53.3	30.5		9.0	47	21.8	22.7		9.4	16	28.7	7.0		9.5	38	13.2	40.3	
8.8		21.6	51.8		*9.2	21	16.2	11.9		9.3		34.7	2.8		9.5		58.3	57.0		8.4	39	29.4	36.9	K
8.5		29.3	39.9	L	9.0		28.3	41.6		9.5	48	18.0	24.2		9.5	17	7.9	8.6		9.5	40	11.7	22.1	
9.3		38.4	9.6		9.0		52.5	37.2	Kb	8.3		35.3	3.3	K	9.0		19.5	52.5		9.1		16.7	58.8	K
9.0	56	2.2	36.8		9.5	22	9.1	3.8		9.5		53.1	10.2	K	9.0		35.2	52.2		9.5		41.2	28.8	
9.2		28.4	50.5	B	8.2		21.9	47.6	L	9 3	49	14.5	47.8		9.4		52.8	24.9		9.4		52.0	7.8	B
9.5		59.7	49.6		9.4		23.7	27.6		9.3		27.0	44.6	B	9.3		55.2	53.8		9.5		59.0	8.1	B
9.5	57	15.8	54.7		9.0		57.3	31.9	K	8.1		33.9	10.5	K	9.4	18	0.8	29.1	B	9.3	41	49.7	13.8	
9.0		23.2	20.5	Kb	9.2	24	1.0	7.7		9.5	50	3.4	29.9		8.1		3.5	4.7	K	9.1		51.6	5.0	b
9.5	58	10.7	58.0		9.5		13.3	6.8		9.4	51	13.1	9.5		9.0		12.7	33.6	B	9.3	42	15.7	58.7	B
9.5		17.8	38.2		9.2		15.4	1.9	Kb	9.0		34.2	53.2	K	8.8		12.9	49.3		9.5	43	1.2	35.2	
9.5		41.7	50.4		9.5		27.5	42.2		9.2	52	19.8	34.4	b	9.5		14.3	43.9		9.0		4.2	32.1	L
9.3	59	28.2	55.9		9.5		42.9	6.5		9.2		20.0	49.4		9.5		52.4	38.0		6.8		24.1	39.0	K
9.0	1	8.0	34.4		9.3	25	0.0	37.8	H	9.5		52.6	56.5		9.1	19	21.9	38.0	K	9.3		40.2	44.4	
9.5		11.5	40.2		9.0		20.3	34.0	K	9.0	53	43.9	57.1	K	7.5		49.3	25.9	K	8.9	44	15.3	5.7	K
9.0		56.2	27.1	K	8.0		35.5	40.5	K	8.9		44.8	1.9	K	9.1		58.4	10.0	Kb	9.1	45	6.9	47.5	
9.5	2	11.3	6.9		9.5		50.5	36.2		8.8		45.5	4.1		9.0	20	2.9	54.9	B	9.5		12.0	18.2	
9.0		29.7	21.9	K	9.1	26	20.5	38.6	K	9.5	55	7.5	1.9		9.5		38.8	6.6		var		17.8	11.4	B
9.5		34.7	12.2		9.2	27	25.3	31.2	K	9.5		9.2	46.5		9.0	21	2.4	25.8	K	9.5		26.8	9.9	B
9.5		35.8	3.8		9.5		27.0	46.8		9.5		55.1	35.1	b	8.7		15.2	58.7	K	9.5		28.2	1.5	
9.4	3	1.7	38.1		9.5		50.0	34.7		9.5	56	10.8	12.1		9.5		21.9	1.0		6.1		28.7	13.4	B
9.5		52.8	2.5		9.4	28	26.9	7.2		9.5		36.9	8.1		7.3		29.6	39.4	K	9.3		39.2	50.3	
9.5	4	3.9	4.5		9.5		27.5	24.7		9.5		42.9	35.8		7.5		49.8	46.3	K	8.9		45.6	54.6	
8.8	5	47.7	55.6	K	9.5		54.5	59.5		9.5	57	25.8	16.2		9.3	22	41.4	36.6		8.8	46	14.4	51.6	R
9.5		48.0	35.8		6.7	29	46.7	34.3	Kb	9.5	58	46.8	16.7		9.5	23	14.3	16.9		8.5		28.5	7.6	K
9.2	6	10.2	20.8	b	7.0	30	0.5	24.3	K	8.5		57.3	37.9	L	7.0		34.1	24.6	Kb	9.3		43.2	49.5	
9.5		14.2	19.8		9.0		4.7	25.2	K	9.0	59	31.3	47.4	Kb	8.7	24	41.5	10.8	K	7.8		47 5	39.2	R
9.1		24.4	57.7	K	9.5	31	5.3	58.8	B	9.5	0	8.1	55.2		9.4		55.2	59.1		9.5		51.7	13.2	
9.5		41.2	20.0		8.4	32	4.5	53.9	Kb	8.5	1	14.9	17.3	L	9.3		56.5	44.9	K	8.2	47	4.0	23.4	K
9.5	8	42.8	44.0		9.0		7.5	26.4	K	9.5		19.0	48.5		9.2	26	2.4	53.3	K	8.9		12.7	20.0	
9.3	9	34.2	6.8		9.5		37.0	44.3		9.5	2	2.0	47.5		9.4		19.4	47.6	B	9.2		37.0	58.1	
9.5	11	6.8	7.3		9.5		51.0	19.8		9.4		8.7	7.6		9.5		24.5	47.1	B	7.3		37.4	53.0	L
9.5		37.7	53.7		9.5	34	5.5	6.3		9.2		44.6	32.0	K	9.4		33.8	33.9		9.1		44.2	35.5	R
9.2	12	1.2	26.7	K	9.5		7.9	19.8		9.4		48.5	48.9		9.3		36.4	42.5	B	9.5	48	5.3	54.7	
9.4		2.2	7.3		9.2	35	20.5	28.4	Kb	9.5	3	31.9	25.2		8.5		42.3	26.9	K	9.4		19.2	13.9	a
9.0		11.7	27.4	K	9.4	36	14.8	1.5	Kb	8.9		43.1	14.3	K	9.4	27	27.0	46.3		9.3	49	11.5	59.1	
8.7		16.3	41.9	Lb	9.5		44.3	59.5		9.0	4	6.5	59.3	K	9.2		28.0	17.5	K	6.5		36.2	36.9	K
9.4		20.5	56.3		9.5		51.5	12.2		8.5		13.9	32.8	K	9.0	28	11.8	32.6	K	7.2	50	6.2	53.0	K
9.5	13	8.5	41.5		9.0	37	24.0	1.4		8.5		51.6	30.3	L	9.2		17.9	50.6	K	9.4		15.3	59.4	
7.3		19.5	4.6	K	9.0		34.6	57.7	K	9.3	6	49.9	39.0	a	9.0		43.8	22.7	L	9.3		19.8	54.5	
9.0		46.2	21.2		8.5		40.3	46.0	K	9.0		49.9	36.6		8.9		47.8	50.5	K	9.2		30.1	6.0	
8.7		48.9	55.1		8.5	38	15.0	31.1	K	9.5	7	27.6	10.1	B	9.3	29	12.2	39.6	B	9.5		48.7	46.2	
9.5	14	17.2	14.3		9.0	39	4.3	16.3		9.5		59.2	57.0		8.7		47.2	50,5	K	7.3	51	29.9	23.5	K
9.5		20.7	54.4		9.0		8.7	21.5		9.5	8	6.2	11.1		6.5	30	8.1	48.1	K	6.8	52	4.7	42.0	K
9.1		50.4	25.6		9.0		24.5	7.9		8.7		57.4	2.4		9.5	31	24.3	54.4		7.7	53	53.7	22.8	K
9.2	15	13.0	39.2		3.3		29.3	53.1	K	9.5	9	39.5	9.3		9.5		31.1	43.4		9.5		53.8	59.3	
9.5		59.2	23.8		9.3		38.1	29.8		8.3	10	8.0	8.4	Kb	9.5		38.5	7.4		9.5	54	47.2	7.1	
9.5	17	44.8	3.5		7.1		44.0	59.1	K	9.2	11	15.6	1.7		7.8		45.3	4.3	Kb	9.4		47.4	11.0	B
9.2		46.9	51.0	b	9.5	40	23.5	41.9		9.5		18.9	35.6		9.5		51.4	5.8	B	9.1		48.9	2.3	B
8.2	18	31.3	7.0	K	9.5		28.5	38.1	K	8.5		25.8	52.9	K	8.9	32	3.9	5.5	B	6.2		57.6	9.3	L
8.2		31.5	35.3	K	9.0	41	33.0	51.3	K	8.5		54.0	54.0	K	8.7		38.7	21.1	K	8.7	55	3.2	17.0	L
9.0		46.5	20.3		9.5	42	34.8	33.2		9.0	12	39.4	53.2	B	9.3	34	52.7	36.9		9.4		14.7	40.6	
4.8	19	4.2	56.5	K	var	44	0.8	34.7	B	8.8		40.4	32.1	K	8.5	35	26.6	54.5	K	9.2		34.6	29.3	
9.3		13.8	1.2		9.0		12.3	7.2	K	9.0	13	10.8	51.4	Kb	9.5		48.7	29.3		9.0		47.1	58.0	
9.1		21.8	5.5	K	9.5	45	2.8	56.9	B	9.5		41.1	2.1	a	7.5	36	22.8	55.9	Kb	9.3	56	9.2	30.0	
		+	—				+	—				+	—				+	—				+	—	
10pr.		28.03	2.30		10pr.		27.78	2.03		10pr.		27.52	1.68		10pr.		27.34	1.37		10pr.		27.21	1.06	

2867m			
9.5	21	21,2	38.4

3101—3160

	16ᵐ—17ᵐ	+15°	
m	′ ″	′	
9.2	56 10.1	35.6	
8.8	57.7	26.2	
9.5	57 44.7	37.8	
9.2	52.4	33.5	
9.0	58 8.5	56.7	
9.0	47.6	3.7	
9.3	56.2	25.6	
7.0	59 43.1	25.9	K
9.5	58.9	16.3	
9.5	59.0	48.5	
9.5	0 19.2	29.7	
9.4	30.0	25.8	
9.5	31.4	46.1	
9.5	39.9	7.4	
9.5	47.0	0.4	
7.8	1 8.7	25.2	K
9.3	2 16.6	52.7	
7.3	27.0	9.4	K
9.5	34.2	7.0	
9.5	3 20.7	43.8	*b*
9.5	4 4.6	54.0	
8.0	22.1	6.2	Kb
9.4	29.2	36.3	
9.4	40.7	43.3	
9.5	50.8	41.2	
9.5	58.9	38.7	
8.5	6 0.7	34.1	K
9.5	25.0	6.0	
9.0	7 2.7	42.0	
8.9	14.0	3.7	
9.0	25.7	48.5	
9.0	38.2	28.0	
9.0	8 3.7	28.9	B
9.5	25.3	48.3	B
9.3	26.3	50.3	B
9.4	28.6	4.0	
8.5	29.7	34.5	K
9.4	42.9	47.3	
9.4	45.5	29.6	B
9.5	49.5	20.1	
8.1	50.9	4.7	K
9.3	53.0	49.8	
9.2	9 31.8	19.2	B
9.3	34.9	12.2	
9.5	58.4	14.5	
9.5	10 1.0	57.9	
7.1	27.3	59.0	B
9.3	28.2	8.1	
8.3	29.2	27.2	Kb
9.3	34.6	5.6	
9.3	38.5	51.0	
9.3	42.7	42.7	
8.3	43.9	21.1	K
9.3	11 9.7	21.5	
8.2	12 7.9	2.3	Kb
9.5	19.2	15.9	
9.0	27.2	23.8	
9.5	40.4	10.8	
9.3	56.1	43.6	B
9.5	13 3.2	10.2	
10pr.	*27.11*	*0.76*	
	+	—	

3161—3220

	17ᵐ	+15°	
m	′ ″	′	
9.0	13 47.5	41.4	
9.2	53.4	4.0	
7.2	14 2.7	19.3	R
9.1	4.9	12.4	
9.4	6.0	23.5	
9.5	13.4	32.7	
9.3	39.6	51.6	
9.0	49.2	47.1	K
9.5	15 13.2	22.3	
9.5	31.9	56.9	
7.0	52.2	18.6	K
9.3	56.7	40.3	
8.4	16 30.1	3.1	K
9.1	37.7	43.4	*b*
9.3	17 8.7	44.4	
9.4	32.2	29.3	
9.5	39.2	20.7	B
9.5	51.4	2.6	
6.2	18 1.9	46.2	K
9.4	2.5	24.6	
9.5	37.2	28.3	
8.0	53.0	41.7	K
9.5	19 32.9	11.3	B
9.3	20 17.0	54.6	
9.0	30.7	25.5	
9.5	42.2	56.6	B
8.8	51.1	9.5	K
9.2	53 2	9.5	*a*
9.4	53.7	24.9	
8.3	21 13.2	32.4	K
9.5	38.6	40.4	
9.4	53.6	58.1	
9.0	22 34.2	49.5	K
9.5	55.1	44.3	B
8.9	58.9	47.2	K
8.9	23 3.2	49.5	
9.3	15.3	50.3	
9.4	32.1	5.6	
8.6	35.2	30.7	K
8.8	56.7	18.0	K
8.8	24 21.7	19.7	Kb
9.4	30.9	6.7	
9.1	32.9	55.4	
8.4	46.9	57.8	K
9.4	52.2	37.9	B
9.5	25 12.4	59.9	
8.8	27.6	55.8	K
9.4	26 56.7	25.0	
9.5	59.5	35.0	
9.5	27 21.2	22.5	
9.0	24.4	3.1	K
9.3	39.1	5.6	
8.3	44.2	25.1	K
9.5	28 5.4	6.5	
9.3	6.9	59.8	
8.8	8.7	49.0	
9.4	16.8	55.4	
9.5	21.4	13.0	
8.0	21.7	26.3	K
9.5	25.7	41.4	
10pr.	*27.07*	*0.55*	
	+	—	

3221—3280

	17ᵐ	+15°	
m	′ ″	′	
9.1	28 57.6	54.6	K
9.4	29 0.8	44.5	B
9.2	46.7	32.1	
9.5	30 4.7	20.5	
9.4	9.7	58.6	
9.5	11.7	34.5	B
9.5	13.6	30.0	
9.5	21.8	34.0	B
9.3	43.7	51.6	
9.2	31 37.5	34.8	
9.3	38.7	40.0	
8.7	47.6	15.6	K
9.5	53.2	27.9	
9.5	32 17.7	13.5	
8.5	22.6	54.0	K
9.5	28.7	25.8	
9.2	35.9	54.9	
9.1	37.7	57.2	K
9.4	33 5.9	59.8	
9.0	13.9	55.2	K
9.3	45.7	42.9	B
9.0	55.7	40.0	
9.5	34 17.8	16.3	B
9.5	30.2	53.3	
9.5	37.2	17.8	
6.0	37.2	15.2	K
9.5	37.6	12.9	B
9.5	45.3	14.0	
9.4	45.6	3.1	
9.2	35 16.4	51.3	B
8.5	17.7	29.3	K
9.5	39.9	9.0	
9.5	49.1	5.2	
9.0	52.8	2.5	
9.0	36 5.1	39.3	
9.5	11.5	7.8	B
9.4	13.6	18.3	
9.5	37 2.2	32.3	
8.0	5.9	6.0	Kb
9.5	20.7	27.2	
9.5	37.5	40.9	
8.9	39.8	25.5	K
9.4	38 30.1	34.6	B
9.5	31.3	22.5	
9.5	39 1.0	22.8	
9.1	6.8	56.1	b
8.8	38.5	32.1	K
9.0	40 10.2	33.1	K
9.2	27.4	7.4	
7.8	35.6	5.7	K
9.4	41 2.5	54.1	
7.8	3.9	5.6	K
8.5	16.4	59.7	
9.5	29.7	6.3	
9.4	43.4	49.7	
8.9	50.5	46.3	K
9.3	42 8.9	8.6	
9.3	9.5	19.4	
9.5	46.3	25.2	
9.4	49.0	13.2	
10pr.	*27.04*	*0.36*	
	+	—	

3281—3340

	17ᵐ	+15°	
m	′ ″	′	
9.4	42 50.8	59.7	
9.2	43 29.6	5.6	
8.8	31.3	37.9	K
9.5	31.7	46.8	
7.8	35.5	32.8	K
9.5	44 8.5	20.4	
9.5	19.5	15.9	
9.5	22.2	48.8	
9.5	34.4	56.3	
7.7	45 15.1	2.3	K
8.8	20.8	38.6	
6.5	25.8	22.6	L
8.3	46 5.5	45.9	K
9.5	9.0	15.0	
9.5	44 9	45.1	
9.5	47 9.3	6.0	
8.2	13 6	50.1	L
9.0	20.5	24.6	B
9.4	48 23.0	26.5	
9.3	40.4	54.9	
8.0	42.6	18.8	B
9.2	55.0	46.6	*b*
9.5	49 4.3	56.5	
9.4	5.0	43.4	
9.3	25.0	26.5	
9.5	31.6	8.6	
9.5	50 1.1	24.8	B
9.0	48.0	35.2	K
7.3	51 30.0	26.6	K
9.4	32.0	14.5	B
var	33.8	8.9	K
9.5	59.4	59.7	
9.4	52 10.4	37.3	B
9.5	17.0	33.3	
9.2	20.7	36.8	B
9.3	37.3	4.6	
8.3	53 13.7	19.2	K
9.4	25.0	5.9	
9.2	25.7	26.5	
9.1	30.0	15.6	
9.5	32.5	32.5	
9.5	32.5	38.9	B
9.4	41.4	27.5	
9.2	46.5	26.5	B
9.5	50.7	20.6	B
9.4	54 2.1	56.6	B
6.5	24.3	7.1	K
9.3	35.0	8.5	
9.5	36.9	57.5	
9.5	41.2	12.5	
9.5	41.8	19.7	
9.4	46.5	36.9	
9.4	48.0	47.7	
9.4	48.9	58.1	B
8.4	49.0	30.7	
9.4	50.0	47.5	B
9.4	55 4.8	0.9	
8.8	14.5	1.1	
8.3	40.5	57.9	
9.3	56 7.8	46.2	
10pr.	*27.02*	*0.13*	
	+	—	

3341—3400

	17ᵐ—18ᵐ	+15°	
m	′ ″	′	
8.0	56 27.0	0.0	Kb
9.5	42.5	7.3	
9.5	47.5	51.7	
8.1	59.2	25.6	K
9.4	57 11.5	38.6	
9.5	21.5	28.3	
9.5	43.3	59.0	
9.0	47.9	57.2	R
9.5	57.1	54.3	
9.4	59.4	58.0	*a*
9.1	58 24.1	48.2	Kb
9.5	38.8	40.0	
9.5	45.0	45.0	
7.8	48.2	38.9	K
9.5	59 11.1	39.4	
9.5	14.5	54.7	
9.5	37.1	7.6	
8.5	48.5	33.8	L
9.5	0 12.5	35.8	
9 5	19.5	37.9	
9.4	34.6	44.0	
9.0	41.5	41.3	
7.4	47.8	13.3	R
8.6	48.7	56.4	K
6.5	51.1	54.6	K
9.4	53.1	9.8	
8.6	54.0	56.7	K
9.4	1 9.0	38.2	
9.5	20.3	58.2	
9.0	24.4	17.1	
9.5	28.4	55.8	
9.5	44.4	59.8	
9.4	56.7	39.4	
9.5	2 23.4	14.9	
9.5	23.4	56.8	
9.3	35.0	12.5	
9.0	39.8	55.4	K
8.8	54.9	42.8	
8.6	59.6	37.9	K
9.5	3 52.7	14.9	
9.0	57.2	36.3	
9.4	4 1.3	42.6	
9.5	12.5	13.7	
9.5	14.7	56.4	
9.5	15.8	54.4	
9.5	5 4.8	27.2	
9.5	21.4	31.0	
9.5	27.3	9.3	
9.2	47.0	8.2	
9.2	49.5	8.4	*b*
9.5	55.5	1.5	
8.8	57.1	55.3	K
9.5	58.5	25.6	
9.5	6 4.6	48.7	
9.5	31.6	30.2	
9.0	49.9	57.8	K
9.5	56.3	29.2	
9.5	58.8	6.9	
9.0	7 1.5	20.6	K
8.4	7.6	20.1	K
10pr.	*27.01*	*0.02*	
	+	+	

3401—3460					3461—3520					3521—3580					3581—3640					3641—3700				
	18ª		+15°			18ª		+15°			18ª		+15°			18ª		+15°			18ª—19ª		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	7	24.7	59.4		9.5	18	46.5	15.0		9.5	30	45.4	43.0		8.8	42	39.9	36.9	K	9.5	52	0.2	28.0	
9.5		28.0	49.2		9.0	19	5.3	12.5		9.5		49.8	4.0		9.5		56.4	56.9		9.4		13.7	38.7	
9.5	8	5.6	8.7		7.3		29.8	40.6	L	9.4		52.3	35.7		6.6	43	11.2	46.4	K	9.3		34.9	1.3	
9.1		7.7	55.5		9.4		32.0	13.4		8.9	31	35.9	28.5		7.7		27.5	8.4	K	9.5		48.5	32.4	
9.5		12.1	0.6		9.2		39.9	56.5	K	7.9		37.1	2.4	Kb	9.0		37.8	57.3		9.5	53	0.8	28.6	
9.4		18.6	56.4		9.4		47.2	37.6		9.2	32	2.1	1.7		9.2	44	2.9	46.2	K	9.4		0.9	49.0	
9.5		19.0	12.5		8.4	20	22.3	4.2	R	9.5		12.8	57.4		9.5		4.2	1.0		9.2		1.6	18.6	
8.5		24.0	30.1	K	9.0		24.5	47.6	K	9.5		15.3	31.1		9.5		7.1	20.3	a	9.5		9.2	3.9	
8.5		24.5	30.8	K	9.5		34.7	0.5		9.3		41.2	17.7		9.5		26.4	45.8		9.5		21.5	44.7	
9.5		24.8	53.5		8.8	21	2.0	21.4	K	9.0		53.7	32.0		9.5		29.9	13.9		9.2		31.0	39.2	
9.5		33.0	32.9		9.5		2.4	41.2		9.5	33	23.2	11.9		9.5		34.8	49.6	R	8.5		41.1	8.9	K
9.5		46.8	12.1		9.4		9.6	50.7		9.5		45.6	41.6		9.0		36.1	48.1	R	9.5	54	0.4	17.2	K
9.5		47.3	4.3		9.5		13.4	27.8		9.1	34	4.5	40.6	b	9.5		46.4	6.6		8.4		14.2	5.3	K
9.1	9	15.0	24.7		9.4		15.6	55.6		9.5		51.4	38.0		8.9		49.8	49.9	R	9.5		27.2	49.9	
8.2		20.8	18.0	B	9.5		28.7	55.0		9.5		52.1	24.5		9.1	45	2.7	10.8	b	9.3		29.0	50.0	
9.5		40.5	49.0		9.1		29.1	43.5		9.5	35	27.4	11.5		9.5		16.3	1.4		8.3		36.3	28.8	K
8.8		41.8	42.7		8.9		51.1	0.5	K	6.3	36	3.4	4.0	Kb	9.5		17.1	55.1		8.7		44.2	36.9	
8.7		42.0	12.0		9.5		53.9	0.9		9.5		9.1	24.5		9.5		17.6	44.7		8.9		49.3	28.1	K
9.0		42.4	1.2	Kb	8.8	22	12.8	14.1	K	9.5		18.3	54.3		9.5		41.0	22.2		9.3		58.0	5.3	a
8.9	10	2.9	45.6		9.5		16.0	7.8		9.5	37	10.0	52.4		8.8		41.7	52.6	K	9.5	55	4.3	42.8	
9.5		7.0	17.8		9.1		38.8	30.6	K	9.4		15.0	47.6		8.9		50.7	54.5	K	9.2		7.0	33.1	K
9.5		31.5	23.9		9.5	23	17.0	40.6		9.4		41.4	43.4		9.5		54.2	11.3		9.4		34.6	20.7	
9.5	11	16.8	39.0		6.8		28.8	50.8	Kb	8.5	38	6.5	28.7	K	9.4	46	3.6	14.0		9.2		34.8	3.8	
7.9		24.0	47.4	K	9.5		30.3	29.8		9.5		8.6	28.4		9.4		9.1	55.8		9.2		36.0	27.8	
9.5		24.6	19.7		9.4	24	4.1	7.0		9.5		22.1	57.6		9.4		15.3	9.4		9.5		39.9	45.9	
6.9	12	45.2	46.4	K	9.4		5.8	4.1		6.5	39	8.9	34.5	K	9.5		17.6	46.7		9.4		53.1	57.7	
9.2		57.3	37.9	K	9.5		9.9	50.8		9.5		21.3	3.1		9.3		37.8	6.2	a	9.1		56.6	35.5	K
9.3		57.4	22.1	K	9.5		14.7	27.2		9.0		44.0	36.5	K	9.1		44.0	15.6	a	9.5	56	25.0	59.7	
8.7	13	9.2	30.0	K	9.5		20.5	46.4		9.3		47.6	45.2	R	9.2		59.7	6.3	a	9.3		34.2	11.7	
9.3		16.0	24.8	K	9.1		36.5	34.3	R	9.5		51.0	7.9		9.5	47	1.5	24.0		8.9		42.3	24.1	
8.6		55.3	4.2	R	9.3		50.3	40.4		9.5		59.7	15.2		9.4		5.6	54.8		9.5		51.3	54.5	
8.1	14	2.0	21.7	K	9.5	25	1.0	35.0		9.3	40	5.0	8.5		8.5		22.2	5.0	Kb	9.5	57	4.7	32.7	
9.5		9.7	44.0		9.2		2.8	57.1		9.5		10.6	0.5		9.5		57.5	2.5		9.5		21.6	30.9	
9.5		15.7	38.1		9.5		13.2	57.7		9.5		13.1	24.3		9.5	48	8.2	58.8		9.5		23.9	47.7	
9.5		20.4	12.4		9.3		26.4	56.2		9.5		13.4	39.5		7.0		14.6	9.9	K	9.2		26.3	18.7	
9.5		34.6	36.8		9.5		27.0	7.9		9.3		26.0	31.9		9.5		35.4	36.7		9.5		34.6	2.1	
9.5	15	9.6	41.9		9.3		28.5	4.1		9.2		26.0	30.4		9.5		47.0	35.9		9.5		42.6	2.1	
9.5		13.0	14.2		9.5		51.4	35.9		9.2		28.9	14.5	R	8.4	49	1.0	39.8	K	9.4		53.5	12.4	
7.7		19.1	34.0	K	9.5		52.9	51.5		9.1		32.4	6.0		9.5		6.6	17.9		9.5	58	5.6	47.9	
9.5		41.5	15.0		9.5		58.6	51.7		9.5		36.8	35.0		9.5		8.5	41.9		9.5		6.5	5.0	
9.4	16	8.9	29.2		9.4	26	18.4	48.4		9.3		37.7	20.8	R	9.3		13.0	0.9		8.9		17.6	12.3	K
8.0		12.5	49.6	L	9.5		22.0	0.2		9.4		43.1	26.8		8.0		31.5	10.8	K	9.5		19.2	17.1	
7.6		13.8	43.0	L	9.4		35.7	24.3		9.5		45.0	2.0		9.4		37.8	54.9		7.5		19.8	31.4	K
9.5		15.3	29.0		9.5		41.4	50.0		9.4		46.9	30.6		9.0		57.9	12.1	K	9.5		31.4	37.3	
9.3		47.9	45.4		8.7		56.2	12.6	R	9.5		52.5	20.2		9.4	50	5.1	48.3		9.5		55.3	32.5	
9.0		48.0	26.5		8.7	27	2.1	52.4	R	9.0		55.0	28.0		9.5		15.0	5.7		9.4		57.7	27.7	
9.5	17	2.2	19.6		8.6		3.0	14.3	R	7.7		56.1	21.4	L	9.0		20.7	34.7		9.5	59	2.8	55.4	
9.2		9.3	48.8		8.2		29.5	34.8	L	9.2	41	3.9	53.0		9.5		23.0	23.7		9.5		24.7	27.3	
9.5		25.2	17.9		9.5		53.6	26.4		8.4		16.6	24.9	L	9.5		39.5	17.7		9.4		28.2	6.7	
8.9		25.3	3.7		9.5	28	0.0	28.7		9.4		26.0	31.0		9.3		47.0	51.5		7.3		46.3	38.3	K
9.5		39.1	35.1		8.5		1.7	7.1	K	9.4		32.4	49.8		9.5		48.2	45.4		9.5	0	1.7	1.6	
9.5		49.9	17.6		9.5		24.8	43.5		9.5		36.1	5.8		9.3		57.2	20.1		9.5		11.3	13.2	
7.3		50.5	34.6	L	9.3		32.0	2.3		6.9		49.2	13.9	K	9.4	51	3.4	25.6		8.3		15.2	43.9	K
9.5		53.1	54.9		8.9		55.3	21.1	K	8.6	42	6.1	39.5		9.4		17.1	3.8		9.4		58.2	16.1	
9.4		53.3	51.9		9.5	29	1.2	33.3	a	8.9		8.4	3.5	Kb	9.5		22.3	15.6		9.3	1	1.9	14.5	
9.3		55.2	36.8		9.4		4.5	23.7		9.5		8.9	9.8		8.9		30.0	2.3	Kb	8.3		4.8	16.8	K
9.4	18	3.4	46.0		9.5		43.9	59.5		9.5		26.7	27.3		9.5		32.0	49.2		9.3		8.0	15.2	a
9.5		8.1	55.3		6.5	30	9.3	20.3	K	9.4		27.4	56.7		9.4		35.5	45.2		8.0		11.4	51.2	K
9.5		33.7	23.5		9.5		13.9	1.1		9.5		39.0	45.0		9.1		53.0	24.4	K	9.5		31.7	26.4	
9.0		36.4	0.5	Rb	9.5		20.6	21.9		9.0		39.2	9.2	K	8.8		57.9	7.0	K	9.5		38.0	9.4	
		+	+				+	+				+	+				+	+				+	+	
10pr.		27.02	0.20		10pr.		27.04	0.36		10pr.		27.07	0.58		10pr.		27.09	0.68		10pr.		27.12	0.82	

19ʰ +15°

3701—3760

m	19ʰ ′ ″	+15° ′	
8.9	1 41.1	6.3	Kb
9.5	51.0	14.4	
9.3	2 0.8	52.3	
8.6	19.2	28.4	K
9.5	37.6	4.3	
9.5	43.7	34.0	
9.4	49.1	0.0	
9.3	53.4	53.6	
9.5	3 0.0	29.2	
9.5	3.9	4.6	
9.5	13.3	6.0	
8.9	15.0	47.3	K
9.0	19.0	44.3	K
9.5	31.0	34.3	
8.9	39.6	52.4	K
9.1	4 16.6	47.7	
9.4	22.1	11.4	
9.4	29.3	5.9	
9.3	31.0	17.1	
9.3	31.8	16.3	
7.5	37.6	32.6	K
9.5	5 30.3	20.5	
9.5	35.5	42.3	
9.2	40.7	0.3	
9.5	40.7	49.5	
8.7	57.1	15.3	K
8.7	6 0.0	13.5	K
9.5	0.0	2.6	
8.9	23.4	12.4	K
9.5	35.3	15.8	
9.1	44.7	15.6	K
9.1	46.9	5.7	
9.5	47.4	42.1	
9.5	51.5	8.2	
9.4	55.3	0.3	
9.5	7 7.2	59.8	
9.4	32.8	12.8	
9.5	37.4	14.4	
8.4	57.3	7.3	Kb
9.5	8 7.5	6.3	
9.5	17.7	27.3	
9.5	31.6	38.6	
7.0	36.3	57.4	K
9.3	42.4	9.4	
9.2	45.4	40.9	
9.0	49.5	3.3	
6.8	9 28.9	54.7	K
9.1	39.2	18.3	b
9.5	44.3	2.6	
9.4	59.0	23.1	
9.4	59.6	18.0	
8.4	10 1.6	5.3	K
9.4	11.7	16.5	
8.8	25.0	44.2	K
8.5	30.1	50.2	K
9.5	37.8	49.6	
9.4	11 26.9	19.2	
9.5	27.8	1.6	
9.5	46.4	46.2	
9.5	54.1	27.2	

10pr. 27.17 0.96

3761—3820

m	19ʰ ′ ″	+15° ′	
9.1	11 55.7	16.6	
7.5	12 4.9	24.8	K
9.5	13.8	25.7	
9.4	15.2	54.3	
8.0	17.8	59.5	K
9.3	31.9	48.9	
9.3	33.1	32.2	
9.0	36.2	24.0	
8.3	37.9	9.4	
9.5	41.0	22.5	
9.5	57.6	51.4	
9.5	13 1.9	35.7	
9.4	6.4	33.0	
9.5	44.6	31.7	
9.1	46.3	9.7	b
9.5	54.5	57.7	
9.5	14 27.2	41.2	
9.2	33.1	27.6	
9.5	38.0	38.7	
9.2	44.0	36.4	
9.3	15 23.0	33.4	
8.8	24.5	35.0	K
9.4	25.1	55.3	
9.5	39.8	0.8	
9.5	49.4	6.7	
9.2	16 1.5	2.7	
9.2	26.3	47.1	
9.5	28.0	27.8	
9.2	33.9	46.8	
9.5	42.5	55.8	
9.3	48.8	38.2	
9.4	49.7	21.1	
9.5	50.4	57.5	
9.5	57.5	15.6	a
8.5	17 6.0	16.5	K
8.3	8.1	28.8	K
9.3	8.7	59.1	
7.0	16.3	44.4	K
7.9	28.8	26.9	K
9.5	39.9	0.5	
9.3	47.1	46.1	
9.4	53.8	20.9	
8.7	55.5	37.7	K
9.5	18 5.8	0.3	
9.5	32.4	58.0	
9.4	54.1	13.4	
9.4	56.0	11.7	
8.7	19 10.4	57.1	
9.5	21.0	49.8	
9.3	22.7	33.8	
8.0	25.0	16.4	K
8.7	35.2	49.6	K
8.1	36.8	15.8	K
9.0	20 5.3	42.7	
9.4	21.0	18.6	
8.6	27.7	48.7	K
9.4	44.4	4.3	
9.3	47.4	45.1	
9.3	47.5	14.1	
9.5	21 4.3	1.8	

10pr. 27.22 1.10

3821—3880

m	19ʰ ′ ″	+15° ′	
9.5	21 9.3	15.4	
9.5	12.8	44.2	
9.2	16.6	48.6	R
9.2	24.0	30.2	b
9.2	26.7	42.1	
9.5	46.5	53.5	
8.7	50.3	59.7	
9.4	53.1	41.7	
9.5	22 3.1	6.8	
9.5	6.0	52.9	
9.5	9.8	10.4	
9.5	25.3	5.2	
8.6	42.8	57.6	
9.5	50.9	6.4	
9.5	23 6.4	45.6	
9.2	7.6	8.4	
8.8	23.5	12.5	K
9.5	30.8	24.6	
9.3	40.2	7.2	
9.3	24 12.9	41.8	
9.5	15.0	35.3	
9.4	19.1	0.3	
9.4	27.2	45.2	
9.2	37.7	25.0	b
9.4	47.1	43.1	
9.4	25 1.5	56.8	
9.4	11.2	59.3	
9.0	24.9	57.4	
9.4	27.8	16.2	
8.2	27.9	59.3	K
8.6	30.5	55.3	K
9.5	33.4	18.4	
9.5	52.1	32.4	
9.4	57.2	17.3	
9.0	58.8	15.5	
9.2	59.9	12.4	
9.3	26 10.0	59.3	
9.5	27.6	25.1	
9.5	31.7	12.9	
9.4	37.9	20.4	
9.5	43.7	16.9	
9.5	45.8	28.0	
8.1	27 22.7	3.6	Kb
9.5	38.9	47.3	
9.4	43.3	22.1	
7.0	44.9	57.1	K
9.4	56.6	33.2	
7.5	59.1	9.6	K
8.8	28 21.4	30.0	
9.5	23.7	39.4	
9.2	33.8	6.9	a
6.0	49.7	17.8	K
8.4	29 10.1	57.5	
9.2	12.9	6.8	a
9.5	22.6	28.0	
9.4	31.5	12.5	
6.7	47.3	14.4	K
9.4	30 17.7	28.1	
9.4	40.0	53.5	
9.5	43.6	13.9	

10pr. 27.27 1.22

3881—3940

m	19ʰ ′ ″	+15° ′	
9.3	31 8.5	26.3	
9.5	11.9	0.3	
9.3	12.4	44.1	
8.8	23.0	54.8	K
9.2	33.4	42.1	
9.3	50.1	14.3	
9.5	52.5	55.9	
9.3	54.6	39.9	
9.5	32 4.7	59.9	
9.3	16.2	51.0	
9.2	16.6	24.4	b
9.3	40.7	31.7	
9.5	40.9	1.9	
9.3	43.1	43.0	
9.2	33 19.3	12.2	K
9.4	39.9	28.4	
9.5	58.1	18.1	
9.3	59.7	26.0	
9.5	34 14.4	2.8	
9.5	17.9	46.9	
9.2	41.3	13.7	
9.5	45.9	12.0	
9.5	46.7	19.6	
9.3	51.2	54.1	
9.2	35 5.8	58.1	
9.0	31.3	12.2	
9.5	41.1	5.0	
9.5	47.6	22.5	
8.8	36 7.4	51.6	
9.1	11.7	2.7	
9.0	14.6	19.2	
9.1	22.7	58.1	
9.2	32.8	38.6	b
9.5	35.8	25.0	
9.4	36.9	40.7	
9.5	56.5	41.5	
9.5	37 15.8	25.6	
9.5	21.2	24.9	
9.5	35.3	27.0	
9.5	38 5.9	48.4	
9.5	13.9	31.4	
9.4	18.6	10.4	
9.5	19.5	23.9	
8.6	26.4	29.7	
7.6	31.1	56.3	K
9.3	34.8	28.0	
9.5	53.7	45.9	
9.2	39 7.3	22.1	
8.7	11.6	51.7	K
9.5	19.0	20.8	
9.2	21.2	14.0	a
9.5	31.9	11.5	a
9.5	36.7	26.6	
8.9	49.0	55.9	
9.3	56.0	32.8	
8.9	40 0.9	12.2	K
9.5	6.3	40.0	
9.5	9.5	31.4	
9.5	24.1	33.2	
9.3	25.3	23.6	

10pr. 27.34 1.36

3941—4000

m	19ʰ ′ ″	+15° ′	
8.5	40 42.4	7.4	
9.5	46.0	16.1	
9.1	41 2.0	55.4	
7.5	3.6	33.1	L
9.2	8.2	31.1	a
8.7	15.1	35.9	L
9.5	16.0	16.3	
9.5	24.5	19.9	
9.5	46.6	20.1	
9.5	42 7.0	1.4	
9.5	9.1	16.3	
9.0	9.4	22.6	
8.9	20.7	5.7	
9.5	28.8	54.6	
9.5	30.6	10.1	
8.3	46.6	39.2	
*9.5	57.9	18.4	
9.1	43 57.7	46.8	K
9.5	44 7.4	33.0	
9.5	19.9	55.7	
9.5	50.1	32.1	
9.4	50.7	55.5	
9.5	52.0	19.8	
8.6	53.6	21.4	K
9.3	57.5	6.2	
9.0	45 28.2	57.5	
9.4	39.8	43.3	
8.4	46 1.0	33.9	Kb
9.5	2.9	22.6	
7.9	18.5	52.3	K
9.3	31.0	38.2	
9.5	45.6	42.5	
9.5	53.9	37.1	
9.4	55.8	21.2	
9.1	47 37.1	49.5	b
9.0	41.2	37.2	
9.5	46.7	35.5	
9.5	51.1	47.2	
9.5	53.2	18.5	
9.5	57.3	16.8	
9.4	48 1.8	49.5	
9.5	12.5	19.1	
9.5	14.0	18.6	
9.5	21.6	41.4	
8.0	29.1	4.0	Kb
9.5	46.8	53.3	
9.5	50.4	24.0	
8.8	49 20.1	34.7	K
9.3	35.8	26.0	
9.1	39.9	51.6	
9.3	47.3	9.0	Kb
9.3	48.0	5.5	
9.4	50 0.2	59.0	B
9.3	9.8	36.0	
9.4	20.1	44.6	
9.4	26.7	59.0	B
8.5	44.4	12.9	K
8.3	55.0	1.5	K
9.3	51 1.1	26.9	
9.5	9.3	26.6	

10pr. 27.40 1.49

3956a
9.5 | 42 52.6 | 41.2 |

4001–4060					4061–4120					4121–4180					4181–4240					4241–4300				
	19ᵐ–20ᵐ		+15°			20ᵐ		+15°			20ᵐ		+15°			20ᵐ		+15°			20ᵐ		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	51	15.8	8.8		9.5	2	5.5	36.3		9.3	10	34.0	38.6		6.5	24	24.6	17.9	K	9.5	38	9.0	53.2	
8.5		25.9	13.0	K	9.5		11.2	34.2		9.5		54.1	18.5		9.3		31.4	27.5		9.1		14.5	52.8	B
9.5		26.8	24.3		8.2		28.8	39.9	B	9.4		54.4	10.6		9.3		45.3	47.8		9.5		15.4	4.2	
9.5		34.9	31.2		9.2		45.4	31.7		8.6	11	17.4	33.8	B	9.5	25	7.8	2.4	a	9.5		27.5	44.9	B
9.4		53.9	55.6	B	9.5		50.1	42.3		9.3		47.4	14.7	R	8.5		12.6	26.7	K	*9.5		27.9	18.5	
9.4		56.7	3.2	B	8.5	3	3.3	46.5		9.4		47.7	11.7	R	8.8		16.1	36.4	K	*9.3		51.3	20.5	
8.8		58.0	21.0		9.5		3.8	22.7		9.5		56.4	1.3	B	7.5		28.1	24.7	K	9.5		57.6	5.2	B
9.4	52	24.3	6.4		9.4		7.5	43.4		7.7	12	50.4	5.2	B	9.2		45.9	42.5		9.5	39	12.4	34.7	
9.5		26.4	3.7	D	9.4		13.2	52.8		9.0		55.3	28.4	Kb	9.4		52.8	36.7		9.5		22.3	54.7	R
9.5	53	12.9	20.5		9.3		29.8	10.6		9.3		56.2	55.7		8.8		58.2	1.8	Kb	9.5		26.5	1.8	
9.3		14.1	14.6		7.8		46.9	35.7	B	9.3		57.6	49.1		9.4	26	10.1	14.5	B	7.3		27.8	22.7	K
9.4		16.8	45.4		9.5		53.6	3.8		9.4	13	4.6	23.0		9.0		12.1	15.7	B	9.5		32.1	54.0	B
9.1		27.9	52.5		9.4		58.3	56.8		8.7		6.3	50.6	K	8.9		16.4	25.0	K	9.5		37.1	2.6	
9.5		46.0	16.2		7.0	4	30.4	45.6	L	9.5		9.8	24.3		9.4		21.1	21.0		9.5		42.8	57.5	
9.5		49.8	51.2		9.2		35.2	42.3	R	9.4		31.5	51.1		8.7		25.6	31.8	K	3.5		56.1	36.2	K
9.5		54.6	3.7		9.3		41.9	32.7		9.5		33.3	13.6		9.5		35.0	4.3		8.8	40	35.7	58.7	K
9.5	54	12.1	31.0		~~9.4~~		~~46.1~~	~~8.9~~		7.0		33.7	5.4	K	9.2		36 5	24.2		7.3		52.8	43.3	K
8.6		21.6	37.6	K	var		57.8	11.7	B	8.2		58.6	33.3	K	9.5		58.3	4.5		9.5	41	2.1	35.0	
9.3		25.6	19.7		9.4	5	0.0	10.3	aB	8.6	14	12.1	51.3		*8.2	27	8.8	16.8	B	9.5		4.8	52.1	
7.6		28.9	5.0	K	9.4		0.8	37.2		9.0	15	3.7	5.7	K	*9.5		24.8	30.1		9.5		12.3	39.1	
8.9		30.3	47.0	Kb	6.7		8.9	26.8	L	9.5		22.4	11.3		7.5		25.3	20.0	B	9.5		24.4	13.6	
9.5	55	2.2	7.1		var		12.5	37.7		8.5		33.3	55.6	K	9.4	28	11.8	49.4		9.1		47.9	54.2	K
9.5		23.5	11.3		9.5		21.1	1.4		9.0		33.9	54.8	K	9.5		22.3	14.0		9.4	42	10.9	40.9	B
9.4		51.5	56.1		8.5		25.7	53.8	B	8.5		38.6	47.4		9.5		24.0	3.0		9.5		16.8	41.9	B
9.1		51.9	49.7		9.3		39.0	55.5		9.5	16	2.2	4.2	D	9.0		44.3	25.4		9.4		22.0	40.1	
7.0		58.1	14.4	K	9.5		41.3	21.0		9.4		15.4	35.0	B	9.0		48.1	31.6		8.2		22.1	46.0	K
9.3	56	0.8	11.0		7.0		41.6	48.9	P	9.1	17	0.3	33.3	R	9.0		56.6	43.2	K	9.5		43.7	4.3	
9.5		18.3	52.6		9.4	6	6.1	2.0		6.8		14.1	35.3	L	9.3	29	1.3	57.7		8.2		52.6	26.7	L
8.5		22.8	3.9	K	7.3		12.8	40.1	K	9.3		46.0	9.3		9.5		9.9	24.7		8.6		59.6	21.2	L
9.0		42.3	21.2		9.2		12.9	50.5		8.1		47.6	16.1	K	9.2		10.3	6.2		9.2	43	5.8	17.5	a
9.3		44.4	48.0		9.3		29.9	16.2		9.3		48.8	29.5		9.3		22.5	10.8	K	9.3		23.7	58.7	
8.5		46.9	3.4	K	9.5		31.6	34.4		7.3		54.9	40.9	L	9.3		54.1	49.8		9.5	44	3.0	6.0	B
5.0		52.3	38.4	Kb	9.5		53.4	3.0		9.5	18	13.9	4.9		9.3		56.0	6 8		8.7		22.1	29.2	K
9.5	57	30.4	8.9		9.4		43 3	22.6		9.3		30.0	5.7		9.0	30	6.6	34.3	K	9.5		44.5	16.0	
9.5		42.4	36.3	B	8.5		55.3	47.0	K	9.5		34.6	50.1		9.4		52.8	29.2		9.5		52.4	27.0	
9.5		55.0	52.7		6.8		56.6	50.1	K	9.2		47.7	5.7		9.5		57.4	57.4		9.4	45	10.5	19.2	
9.3	58	3.1	34.4	K	7.8	7	7.8	42.9	K	9.4		52.1	15.0	R	9.5	31	11.6	26.2		8.7		12.4	50.6	L
6.5		8.1	30.9	K	8.8		13.4	46.9		9.5		55.0	22.3		9.4		12.6	10.1		9.5		20.0	56.3	
9.3		13.6	49.1		8.5		16.1	59.3	B	9.4		59.9	2.9		9.5		22.3	42.0		9.5		51.9	47.5	
6.0		46.1	5.7	Lb	9.0		49.1	14.3	K	9.5	19	11.9	36.7	R	6.0	32	21.4	21.2	K	9.4		58.7	3.1	
8.8		46.1	55.8	K	9.5		52.4	34.7		9.4		23.3	18.8		9.5		30.8	4.2		7.0	46	28.8	47.8	K
9.0	59	33.6	41.6	B	9.5		57.0	7.2		9.1		49.0	14.9	R	3.5		55.1	26.0	K	9.0		38.2	57.0	K
8.0		46.8	50.5	K	9.3	8	6.8	3.4	✓	9.5		53.3	18.8		9.4	33	8.4	17.8		*8.8		42.3	44.0	K
9.1	0	4.4	57.9	K	9.5		15.8	18.4		9.5		59.2	20.5		9.5		28.3	46.0		9.2		59.3	5.2	
9.0		11.8	49.5		8.8		19.6	16.0	K	8.2	20	5.4	35.1	B	9.4		32.7	24.6		9.5	47	16.8	18.9	
9.5		30.1	3.7		9.4		25.4	37.0	B	9.1		10.6	45.0	b	8.5		38.6	14.5	K	8.9		34.7	49.2	K
7.0		41.6	39.1	L	8.7		41.6	55.6		8.8		10.6	26.8		7.3		51.2	8.0	K	8.7		40.3	32.0	L
9.2		59.7	20.5		9.4		52.6	7.9	✓	9.4		21.7	59.7		9.1		52.7	28.4		9.1		50.4	26.1	
9.0	1	7.3	45.7		9.5		58.7	0.5		9.4		31.8	1.4		9.0	35	13.3	15.3		9.4	48	3.3	15.3	
9.5		11.8	8.4		9.0	9	13.7	52.6	K	9.5	22	1.0	6.4		9.3		19.9	22.5	B	9.5		4.3	1.9	B
9.5		14.5	5.6		9.4		34.0	23.7	✓	7.5		21.9	46.4	K	9.2		37.4	35.4	a	9.5		18.5	1.9	
9.2		18.2	56.0		9.5		39.0	44.5		8.3		29.1	47.0	K	8.8		54.8	36.1	P	9.4	49	7.9	56.9	
8.3		21.0	45.0	B	9.2		56.5	33.5		9.1		35.2	10.0	Rb	9.4	36	12.0	31.2		9.5		24.7	54.6	
9.0		25.4	23.7		9.5		57.3	41.5		9.5		47.3	52.3		9.5		29.8	20.6		9.3		34.4	51.9	
9.2		35.4	59.7		9.0	10	11.7	6.9		9.5		49.1	57.4		9.1		50.9	48.9	b	9.0		47.8	10.2	
9.5		39.3	50.8		9.5		13.7	59.1		9.3	23	5.9	50.5	B	9.3	37	5.1	42.9	B	9.3	50	22.8	18.3	
7.8		47.9	16.1	K	9.5		14.3	25.1		8.4		7.1	26.9	K	9.5		15.0	46.4	D	7.3		25.8	41.3	K
9.4		48.1	22.1		9.4		15.6	54.2		9.2		9.6	12.6		9.5		27.9	33.0	B	9.4	51	19.0	5.2	
9.0		55.2	27.8	K	9.1		20.8	11.2		9.3		32.6	39.4	K	9.3		28.1	49.5	K	9.0		44.4	32.2	
9.4	2	1.3	26.5		7.2		30.3	25.4	P	9.1		59.1	24.4	K	9.1		53.3	8.7	Kb	7.2		48.2	52.2	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		27.48	1.63		10pr.		27.56	1.75		10pr.		27.66	1.89		10pr.		27.77	2.02		10pr.		27.92	2.19	

4199 a				
9.5	27	15.2	13.7	B

4245 a				
var	38	37.8	52.5	B
4245 b				
9.5	38	49.7	52.6	B
4282 a				
9.5	46	41.8	56.3	

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20°—22° +15°

4301—4360					4361—4420					4421—4480					4481—4540					4541—4606				
	20h—21h		+15°			21h		+15°			21h		+15°			21h		+15°			21h—22h		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	51	57.9	6.8		9.2	4	4.6	40.2	K	9.3	20	56.5	37.8		9.5	36	50.0	25.7		9.0	53	45.3	12.2	
8.0	52	1.3	51.3	K	8.7		22.6	16.0	K	8.9	21	0.6	48.3	B	8.5		51.4	9.8	K	9.3	54	3.0	11.7	B
9.4		26.3	52.8		9.5		24.4	2.9		9.0		13.5	55.0	K	9.5	37	3.0	50.5		9.0		23.6	31.7	K
7.7		29.4	0.7	Kb	9.5		39.3	22.6		9.1		29.9	3.4		9.1		39.0	57.4	K	9.2		25.6	51.4	
9.5	53	32.3	6.5		9.0		53.2	41.0	K	9.0	22	38.0	37.1	K	9.5	38	0.9	45.8		9.0		43.0	5.4	K
8.0		57.3	29.7	L	9.5	5	1.5	57.0		9.4		38.6	59.0		8.7		2.1	57.1	K	9.2		48.3	52.5	
8.8	54	30.0	19.0		9.3		9.6	18.8	K	8.3		53.9	34.0	K	9.5		7.2	6.0	*a*	9.3		57.3	38.0	K
9.0		34.6	53.1		9.1		14.7	1.5	*a*	9.5		59.4	30.5	*a*	9.3		47.5	46.5		6.8	55	39.7	18.2	K
9.5		41.4	25.9		9.5		22.1	47.9		9.1	23	24.4	4.1	*Rb*	9.5		52.1	54.5	B	7.5		57.3	4.8	Kb
9.5	55	2.4	57.5		9.5		50.0	5.5		9.4		30.1	50.3	B	9.3		54.0	19.9	B	9.0	56	5.0	20.8	D
9.5		15.6	50.6		9.0	6	4.6	28.7	K	9.1		31.4	31.5	K	8.2		54.6	5.4	K	8.8		13.6	33.8	K
9.5		17.8	54.6		9.5		29.1	42.7		9.5		43.5	20.5		9.2		55.6	6.0	K	9.5		17.6	54.7	
9.5		22.7	21.7	*a*	9.4		35.3	3.0	B	8.6		49.0	42.7	K	9.5	39	14.7	2.1		9.4		35.0	10.8	D
9.2		27.1	11.7	K	9.5		39.9	57.8		9.5	24	3.0	47.9		9.0		17.5	20.0	B	8.2	57	20.6	33.9	K
9.5		40.2	5.0		6.5		40.1	23.0	K	8.0		8.6	56.0	K	9.2		22.7	45.0		9.5		22.3	12.6	
9.5		49.1	54.8		9.5		58.0	51.2	B	9.3		10.0	39.6		9.0		26.2	16.3		8.3		28.8	10.3	K
6.9	56	0.8	24.6	L	9.5	7	49.3	24.4		9.0		29.5	51.3	K	9.1		37.2	4.0	K	9.0		32.0	11.8	
8.7		8.2	39.2	K	9.4		56.4	23.9	B	9.4		35.7	5.7	B	9.5	40	8.9	27.7		8.0		32.6	9.2	K
9.4		13.3	47.3	B	6.8		58.6	53.0	K	9.3		47.9	3.9		9.3		10.2	23.1		9.1		39.7	33.5	K
7.8		14.0	11.6	K	9.4	8	9.9	27.1		9.5		55.2	8.0		9.1		27.5	21.9		8.7		44.6	21.3	K
9.5		44.4	53.2		9.1		32.6	51.4		9.5	25	24.4	26.7		9.4	41	13.5	58.9		9.5	58	3.1	41.8	
9.5	57	11.2	7.5		9.0	9	9.6	23.3		8.8		30.9	6.9		9.5		20.7	52.2		8.8		5.0	32.3	K
9.5		30.9	17.5		9.5		12.2	6.7		9.5		57.5	32.3		9.5		34.6	52.2		9.5		25.5	53.5	
9.5	58	30.9	30.8		8.7		18.4	29.2	Kb	9.5	26	11.4	29.9		9.1		37.2	22.4	K	9.3		28.3	42.2	
8.7	59	8.9	13.5	K	9.0	11	19.8	34.2	B	9.5		32.0	30.2		7.5	42	27.7	5.6	K	9.0		35.2	16.6	
9.5		13.7	56.7		9.5		20.1	44.8		9.4		51.7	0.7	B	9.5		56.2	49.5		9.0	59	14.0	2.0	D
9.5		16.1	59.8		9.3		54.4	1.1		8.0		58.2	2.7	K	9.0		56.2	42.4		9.5		29.0	29.8	
9.5		21.5	31.7	B	9.0		54.8	42.3		9.5	27	25.5	7.6		8.3	43	15.7	4.2	K	9.5		39.0	24.1	D
9.0		37.4	38.0	K	9.5	12	34.7	8.9		9.1		42.0	12.5	*R*	9.0		29.2	8.5	K	9.5	0	20.8	57.9	
9.4		39.1	36.7	B	9.5		38.5	53.4		9.5	28	21.9	7.6		9.5	44	6.7	20.0		9.5		21.8	2.6	
8.7		39.6	25.3	K	9.5		55.1	51.3		9.5		26.7	43.4		9.5		17.3	5.9		9.4	1	0.0	21.8	
9.4	0	1.3	40.9	*B*	9.5	13	44.8	1.4	*a*	9.0		27.4	32.3	K	8.8		30.6	25.8		9.3		16.0	14.0	
9.1		15.4	47.4	K	9.0		45 8	0.9	B	8.8		33.5	6.5	K	9.0		41.7	18.2		9.2		17.2	3.5	
9.5		18.6	59.0		9.5		52.3	5.7	B	9.5		36.0	47.2		9.5		46.9	52.7		9.5		24.0	35.3	
9.0		22.9	42.7	K	9.5	14	7.8	5.7	B	9.3		58.5	40.2		9.5		48.7	51.5		9.3		43.7	44.0	
9.5		24.7	17.1		7.9		18.1	12.9	K	9.0	29	3.4	20.1	K	9.5		54.6	11.7		9.4		52.0	17.5	
9.5		28.1	10.5		9.5		56.0	7.4		9.0		25.1	48.8	*B*	9.5	45	12.2	2.9	*a*	9.5	2	5.7	19.5	
9.5		42.4	43.5	*a*	9.1	15	30.1	30.2		8.9		25.4	42.3		9.5		37.6	29.7		8.7		13.0	16.3	K
9.4		43.2	46.2		8.8		48.7	56.0		8.7		26.0	24.3	K	6.8	46	1.6	14.4	K	9.2		13.7	3.5	
6.5		45.9	4.8	K	9.3	16	7.1	40.6	B	9.4		26.7	36.5	B	9.3		24.1	6.4		9.5		19.0	50.5	
9.5		46.5	39.8		8.5		8.1	23.0	K	9.5		26.9	56.9		9.1		28.4	1.4	Kb	9.2		25.0	25.8	
8.7		48.1	48.2	K	9.5		11.3	43.0		8.2		41.0	3.3	K	9.0		54.6	25.9		9.3		48.0	0.5	*a*
9.5		56.1	51.8		9.5		19.2	19.3		9.3		56.5	28 4		9.4	47	24.6	53.2		9.3		49.3	58.4	
9.3		57.2	46.0		7.5		19.2	53.0	K	9.5	30	0.0	11.0		9.2		36.8	23.7	B	9.4		57.4	48.1	
9.3	1	24.9	23.4	B	8.8		24.4	41.0	B	9.4		4.5	48.8		9.3		45.9	3.1	*R*	9.5	3	26.0	35.1	R
9.0		52.6	13.8	K	9.2		26.9	13.6	B	9.4		32.0	48.6		9.1	48	10.6	25.5	*b*	7.7		29.7	59.8	K
8.9		53.0	7.3	K	9.0		33.6	4.9		9.5		41.6	53.5		9.5	49	12.0	5.9		8.5		43.4	31.5	K
8.8	2	0.5	12.4	K	9.5	17	10.6	23.7		9.5	31	40.0	11.1		8.3		44.3	27.6	*B*	9.2		54.0	54.4	K
9.2		3.1	4.6	Kb	8.8		13.1	44.1	K	9.2		52.1	1.7	B	9.4		58.1	54.6		9.4		59.0	29.8	
9.2		4.7	37.3	L	9.5		33.5	57.6		9.5	32	3.0	7.5		9.0	50	13.1	54.9		9.5	4	6.4	41.2	
9.5		5.1	55.3		8.2		50.6	9.0	Kb	9.0		8.3	49.9	K	8.8		18.6	31.0		9.3		49 7	31.5	
9.5		38.0	0.7		9.5	18	0.6	52.9		9.5		14.4	26.0		9.5		20.0	42.9		6.3		51.4	20.1	K
9.4		45.6	45.1		9.0		22.3	23.0	L	9.5	33	59.5	59.7		9.3		41.3	10.2		9.5	5	22.8	26.2	
9.0		59.0	35.8	K	9.5		35.0	8.7		9.3	34	33.6	57.3	K	9.5		52.6	51.4		9.5		30.4	23.4	
8.5	3	6.1	35.0	K	9.2	19	17.0	0.9	K	9.0		35.3	47.9	Kb	9.3	51	30.6	42.5	B	9.5		45.4	23.6	
9.5		14.0	2.7		6.5	20	16.7	29.0	K	9.5	35	1.0	7.6		9.5	52	3.8	50 5	*b*	9.5	6	2.0	38.4	Kb
9.3		37.3	7.8	Kb	8.9		18.1	53.6	B	9.5		4.7	38.1		9.1		39.3	32.0		9.5		12.7	39.1	K
9.5		38.6	22.5		8.8		26.0	33.1	K	9.1	36	2.5	32.6	*b*	9.3		39.3	20.3		9.0		39.0	9.1	K
9.5		50.8	48.2		9.5		30.2	55.2		9.3		24.5	37.5		9.3		51.6	27.5		9.5	7	31.7	9.5	
9.0		53.3	45.0	K	8.5		30.3	41.9	K	8.4		32.9	21.9	K	9.5	53	23.0	47.7		9.1		46.1	5.6	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		28.10	2.36		10pr.		28.25	2.49		10pr.		28.44	2.64		10pr.		28.65	2.77		10pr.		28.88	2.89	

4601—4660					4661—4720					4721—4780					4781—4840					4841—4900				
	22ᵘ		+15°			22ᵘ		+15°			22ᵘ—23ᵘ		+15°			23ᵘ		+15°			23ᵘ		+15°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	7	51.5	56.2	Kb	8.0	24	6.3	5.7	K	9.5	45	51.1	0.6		8.8	6	54.5	46.8	K	8.6	24	49.2	48.9	K
9.5	8	31.7	56.6		9.4		38.8	1.4		8.0	46	1.2	44.7	K	9.0	7	0.5	15.1	R	9.5	25	5.1	1.6	
9.3		55.4	51.2		9.2		51.5	55.0	b	9.5		35.0	6.3		9.0		2.1	22.3		9.5		13.2	3.4	
8.2	9	5.4	18.0	K	9.5		55.2	7.6		9.5		35.5	48.2		8.5		4.8	33.6	K	9.5		23.2	27.8	
8.2		49.0	39.1	R	8.0	25	4.1	4.5	K	9.5		36.5	32.0		9.1		10.7	5 6		9.0	27	6.5	29.1	K
9.5		49.8	52.5		9.5		4.7	22.5		9.0	47	14.4	13.8		9.2		25.5	37.1		9.1		10.4	9.4	K
9.0		57.8	32.3		9.5		9.9	55.3		9.5		35.2	13.5		8.5		37.1	35.4	K	9.3		22.7	34.9	
8.7	10	18.1	11.8	K	9.5		17.4	52.3		8.5		39.0	31.7	K	8.9		51.4	35.7	K	9.5		23.8	32.8	
9.5		24.4	19.7		9.5		39.4	24.0		8.3	48	32.8	1.0	Kb	9.5	8	31.0	1.2		8.9		33.0	4.2	Kb
9.5		55.0	44.3		6.6		42.2	5.9	K	9.5		54.1	28.2		9.5		44.8	23.7		8.0		46.7	40.7	K
					*																			
8.0	11	5.0	40.8	K	9.3	26	23.4	54.2	K	9.3	49	18.6	58.6		9.4		45.0	4.4		8.7		51.2	37.8	K
9.5		13.4	16.0		8.7		24.0	11.3	K	9.5		28.2	2.5		9.3	9	35.8	17.1		9.5	28	31.2	51.0	
9.5		15.7	28.4		9.4		29.0	28.1		8.5		36.8	48.2		9.5		56.3	39.6		9.5	29	30.2	3.6	
9.5		29.7	39.8		9.0		59.1	16.8	K	8.8	50	41.9	4.2	K	8.0	10	20.5	54.8	K	8.9		41.4	44.3	K
~~9.5~~		~~38.7~~	~~55.5~~	B	8.7	27	28.4	19.2	K	9.1		53.3	8.2		9.5		25.8	58.6		8.9		57.7	45.4	K
9.5		39.5	5.4		9.2		56.3	56.0	K	9.3	51	37.1	45.5		8.0		31.8	45.5	K	9.4	30	9.8	11.3	
7.5		52.0	31.9	K	9.5	28	0.3	2.2		8.6		42.2	0.4	Kb	8.8		49.5	33.8	K	9.5		10.1	36.6	
8.8	12	0.2	13.1		9.3		10.8	56.9	K	9.5	52	11.4	59.9		9.5	11	0.2	52.0		9.5		44.3	40.0	
9.3		12.7	55.1	a	9.4	29	10.8	46.2		9.5		15.8	34.4		9.5		19.5	40.7		9.3		46.1	28.1	
8.5		39.4	26.7	K	9.5		38.8	6.8		9.0		21.1	45.8		9.0		40.5	48.2	R	9.5	31	14.4	29.4	
9.5		50.8	8.1		9.5	30	5.8	59.3		9.5		42.8	27.8		9.2		46.9	3.3	b	9.5	32	1.4	1.2	
9.0		52.0	6.0	Kb	8.7		9.8	16.1	K	9.3	53	2.5	12.3		9.0	12	0.5	57.8	K	9.5	33	0.1	44.2	
9.5	13	13.8	6.5		9.3		23.1	22.0	K	9.5		12.3	58.0		9.4		17.5	4.3		9.5		23.7	11.5	
9.3		31.4	23.7		9.3	31	49.3	4.1		9.5		17.5	51.3		9.5		18.3	46.2		9.1		27.7	17.1	K
9.5	14	10.6	1.4		9.2	32	8.4	53.8	Kb	9.5	54	3.1	52.0		9.5		21.0	55.2		9.0		52.8	58.8	
9.5		19.0	55.0		9.5		30.6	52.8		8.8		14.8	38.2	K	9.5	13	1.0	57.2		9.5		58.8	52.8	
9.2		21.1	52.0	b	9.5		59.7	30.3		9.3		18.8	55.8		9.3		22.8	41.3		9.2		59.1	9.4	K
9.5		43.4	3.8		9.2	33	9.6	54.0		8.3		33.1	10.9	K	9.5		27.2	59.8		9.5	34	20.1	29.2	
9.3		59.2	30.8		9.3		34.4	52.8		9.3	55	0.1	44.4		8.3		36.2	55.7	K	9.5		40.8	54.0	
9.5	15	0.7	38.4		8.5	34	15.8	22.7	R	8.8		20.8	3.6	K	9.0		37.1	26.5		9.5		51.4	25.1	
9.5		35.0	47.0		9.5		25.8	50.4	B	6.5		25.8	27.5	Kb	9.5	14	4.6	34.4		9.5	35	22.1	54.2	
9.1		46.3	20.1		8.9		56.8	51.0	K	7.8		49.1	41.3	K	9.5		17.1	48.5		6.3		23.4	32.4	Lb
9.2		58.0	15.0	K	9.5	35	58.4	45.4	R	8.5	56	5.0	16.9	K	8.7		38.1	50.9	K	9.5		33.1	48.3	
9.5	16	17.0	39.1		9.5	36	2.8	52.7	R	9.5		32.8	18.9		8.5	15	41.0	24.5	K	9.3	36	18.4	6.0	K
9.5		30.4	11.5		8.5		9.9	31.3		9.0		43.1	7.8	K	8.5		47.2	16.0	K	9.4		18.7	38.6	
9.1		50.3	53.4	K	8.5		43.2	47.9	K	9.0		45.0	4.3	K	9.5		59.0	4.7		9.4		24.5	40.4	
9.2	17	0.0	40.5		9.0	37	1.4	44.8		9.5	57	40.2	9.0		9.5	16	13.4	9.5	K	9.5		48.4	7.2	
9.5		17.4	17.0		9.5		46.1	31.3		9.3		45.4	21.6		9.5		20.1	40.5		9.5	37	11.2	7.7	
7.3		24.4	34.1	L	9.5		56.1	48.4		9.0		58.8	42.4	K	9.3		20.4	13.1		9.3		13.2	27.8	
9.2		28.2	10.1	B	9.3	38	1.4	32.0		7.0		59.1	47.9	K	9.2	17	5.7	42.0		8.5		17.1	40.3	K
9.5		30.7	32.9		9.0		18.1	21.4		8.5	58	13.5	25.5		9.4		14.0	33.5		9.4		54.4	41.7	
9.0		30.7	24.2		9.5		38.8	59.8		9.0	59	27.8	38.6	K	8.7		57.8	9.3	K	9.3	39	5.4	55.5	
9.5	18	4.7	44.0		9.5	39	30.9	58.3		9.0		55.8	42.7	Kb	9.2	18	11.7	15.6	K	9.5		38.1	6.3	
8.8		6.4	32.2	R	9.3		40.8	44.1		9.0		56.1	28.6	K	9.3	19	4.8	59.2		9.3		40.4	27.1	b
9.3		40.3	28.2		9.2		44.0	6.8		9.0	0	10.8	47.2	K	9.5		15.2	48.5		9.5	40	40.3	47.8	
8.9		41.4	57.9	Kb	9.5	40	22.4	37.2		9.5		47.8	4.9		9.0	20	17.2	49.6	K	9.0		47.7	2.3	
9.2		46.0	17.6	K	9.5		27.1	23.0	a	9.5	1	54.5	20.6		8.2		20.2	49.9	K	8.9		51.8	7.8	
9.5	19	6.7	54.7		9.0		35.8	23.7		9.5	2	2.3	8.0		9.5		41.3	3.6		9.2	41	16.1	32.8	K
9.1		25.4	6.3	K	8.6	41	23.1	44.1	K	9.5		5.0	4.2		9.1	21	7.7	15.9	K	9.5		24.4	4.9	
9.0		59.0	46.0	K	8.5	42	18.7	35.8	K	9.5		11.8	48.6		7.0		46.2	13.1	K	9.4		49.8	53.7	
9.3	20	43.4	10.1		9.3		32.1	44.4		9.5		25.8	9.9		9.0	22	41.2	23.3		9.4	42	3.5	55.0	
9.3		45.7	46.5	K	9.5		55.7	28.9		9.2		33.5	2.2	b	9.0		45.0	29.8		9.5		13.8	58.4	
9.5		51.7	46.3		9.5	43	57.4	32.4		9.0		56.8	45.1	K	7.3	23	15.7	45.6	K	9.2	43	17.7	28.8	
9.5		59.0	42.2		9.5	44	0.5	16.5		9.5	3	6.1	3.7		9.3		22.2	50.3		9.2		24.1	24.0	K
9.0	21	27.7	22.8		9.5		5.4	57.2		9.5		34.1	41.4		9.5	24	2.7	8.5		9.5		47.4	37.5	
9.3		53.7	23.5		9.5		13.0	45.5		9.5		40.8	1.0		9.5		5.3	6.4		9.2		53.1	20.6	K
8.2	23	28.4	17.3	K	9.2		55.9	46.2		9.1	4	49.2	0.3	R	7.8		7.2	24.9	K	9.5	44	17.4	24.4	
9.2		28.9	21.7	B	8.8	45	7.8	31.7	K	9.2	6	13.1	35.5		9.4		9.3	27.6		9.5		23.4	23.0	
9.5		28.9	3.6		8.0		13.7	6.8	Kb	8.8		20.5	34.1	K	9.5		43.2	11.7		8.8	45	0.4	40.4	K
9.5	24	2.0	21.8		9.1		45.8	46.4		9.3		39.5	52.5		9.5		43.2	47.8		9.1		59.1	12.5	
		+	+				+	+				+	+				+	+				+	+	
10pr.		29.08	3.00		10pr.		29.36	3.11		10pr.		29.69	3.21		10pr.		29.98	3.27		10pr.		30.32	3.31	

4670a

9.5	26	15.7	53.4

4901—4908				4909—4916				4917—4924				4925—4932				4933—4939			
	23h	+15°			23h	+15°			23h	+15°			23h	+15°			23h	+15°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	46 33.4	10.7		9.5	49 35.1	21.2		9.3	52 16.3	9.0		7.0	55 7.5	27.5	K	9.5	56 41.0	18.9	*B*
8.8	39.7	21.3	K	9.5	41.4	13.6		9.5	29.5	30.1		9.5	7.5	55.4		8.8	57 57.0	33.4	K
8.2	42.7	5.4	K	9.5	52.7	41.0		9.1	48.7	51.6		9.0	16.2	13.7	K	8.7	59.1	31.0	K
9.4	47 31.7	52.6		9.5	58.6	9.3		9.0	53 8.2	50.5		9.0	19.7	16.2		9.1	58 30.7	49.7	K
9.5	48 17.1	47.0		9.5	50 2.7	41.4		9.0	28.7	34.8		9.4	26.7	54.3		7.9	35.7	38.7	K*b*
9.5	17.5	57.6		9.5	33.4	34.4		9.5	54 29.4	48.0		9.5	34.5	48.7		9.5	52.5	19.2	
8.8	38.7	28.9	K	*var*	33.5	8.5	K	9.4	43.7	24.4	K	9.5	44.5	18.8		9.5	59 13.2	59.9	
9.5	54.4	8.5		8.8	51 28.0	2.2	K*b*	9.1	58.2	38.1	K	9.5	56 26.5	59.0					
									+	+									
								10 pr.	*30.61*	*3.34*									

Zone +16°

1—40				41—80				81—120				121—160				161—200			
	0h	+16°			0h	+16°			0h—1h	+16°			1h	+16°			1h	+16°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
8.5	0 2.5	29.9	K	9.0	22 46.7	27.1	K	9.5	44 3.7	25.0		9.0	3 4.5	10.8	K*b*	9.1	23 3.9	13.9	K
8.9	15.6	16.8	K	9.0	23 22.2	6.2	R	9.4	46.9	0.8		9.5	7.0	28.3		9.4	7.0	17.3	
7.0	1 54.2	44.2	K	9.0	39.2	57.4	K	9.0	49.6	52.6	K	8.5	21.7	1.0	K	9.4	25.6	21.3	B
9.4	2 20.3	59.8		9.5	48.7	44.5		9.5	45 13.0	28.1		9.1	4 3.1	58.1	*b*	7.8	26.5	24.6	K
9.5	3 9.1	2.6	K*b*	8.7	24 15.3	28.3	R	9.5	24.8	13.2		9.2	5 9.4	8.2	K	8.8	29.6	49.2	
9.4	18.2	59.3		9.5	25 5.0	45.5		9.5	46 51.9	48.3		9.5	33.3	14.0		9.3	24 0.0	35.4	
9.5	50.0	26.4		8.8	30.2	18.5	L	8.4	47 28.5	7.3	K	9.5	6 41.6	21.3		7.0	14.4	13.8	L
9.5	56.7	1.0		9.5	57.7	42.7		9.5	30.2	45.5		9.0	8 10.4	57.5		8.8	30.8	29.1	K
9.5	4 35.5	31.6		9.4	26 22.9	8.3		9.5	48 0.2	18.4		8.3	25.8	51.5		9.0	53.5	12.5	K
9.5	39.9	47.7	*b*	9.0	27 35.4	46.1		8.4	49 4.9	55.8	L	8.1	29.7	4.2	*B*	8.9	25 42.5	54.2	K
7.5	5 42.0	6.9	*B*	9.5	28 7.2	21.5		9.4	30.1	29.9	*b*	9.5	9 2.5	51.5		9.5	55.8	25.0	
9.3	6 34.8	21.3		9.4	11.7	42.3		9.5	40.0	33.4		9.1	10 25.1	23.8	*b*	8.2	57.5	57.5	K
9.2	7 35.7	24.6	*b*	9.5	34.1	46.4		9.5	50 3.5	59.4		9.2	40.7	36.9	K	9.5	26 31.0	11.8	
8.9	41.9	53.2		9.2	43.7	13.2	K	9.5	41.3	56.2		9.5	57.1	41.8		9.5	27 0.0	45.4	
9.5	8 29.8	17.4	*B*	9.5	29 25.6	52.4	B	9.5	51 0.1	45.0		9.5	11 22.4	0.4		9.5	58.1	8.2	
9.2	32.0	46.6	*Bb*	9.5	31.4	58.2	B	8.9	21.4	7.6	K*b*	9.4	38.1	55.8		6.5	28 5.0	41.9	K*b*
9.3	34.9	5.7		9.5	30 14.8	36.7	*b*	8.0	52 42.4	26.7	K	9.5	44.8	43.9		9.5	29 11.2	38.2	
9.5	9 38.2	47.2		9.5	37.3	54.3		9.1	50.6	8.7		9.5	13 23.9	40.5		9.4	14.4	3.4	
9.0	11 38.0	46.2		9.5	31 21.5	1.4		9.0	59.2	41.6	L	7.7	14 38.6	4.3	K	9.4	14.6	5.7	B
9.5	12 25.3	16.4		9.5	32 53.1	21.8		9.3	53 3.0	10.8		9.2	55.7	19.8		9.5	27.5	41.9	
9.5	41.7	19.9		9.5	33 6.8	33.0		9.3	54 28.0	50.7	K	8.0	58.7	26.6	K	9.3	50.8	37.0	K
9.2	13 36.7	38.2	*Bb*	9.0	45.4	10.8	K	9.3	31.0	54.0	K	9.3	15 18.2	4.5		9.4	30 25.7	8.6	
9.5	14 0.5	51.6		9.0	51.3	54.6		9.1	58.2	19.1		9.5	21.8	33.9		8.5	31 7.2	29.4	K
9.2	20.5	1.8	B	9.2	52.0	45.0		9.2	55 28.7	45.1		9.4	46.6	1.8		9.4	18.1	51.7	R
7.8	27.7	5.3	K	9.0	34 10.1	9.6	K*b*	8.8	45.0	21.8	K	9.5	16 33.9	51.6		9.5	32 19.0	6.5	
9.5	53.2	38.0		9.3	28.5	0.2		9.2	56 21.2	42.0	*b*	9.4	17 15.7	41.3	B	9.2	36.1	20.5	K
8.7	15 39.8	57.8	K	9.4	49.0	0.0		9.5	57 19.7	27.8		9.5	39.5	30.8		9.0	55.5	43.6	
9.0	16 0.7	43.3	R	9.5	35 9.7	59.1	B	9.5	31.3	7.0		9.1	18 6.6	11.0	K	9.5	34 8.0	19.7	
9.5	28.2	53.1		9.5	23.2	59.3	B	9.0	42.9	54.9	K	9.0	30.5	22.5	K	9.5	20.6	52.4	
9.1	42.9	50.4		8.6	58.1	34.1	K	9.0	58 2.0	17.8	K	9.3	35.7	14.6	K	9.0	35 56.2	23.9	K
8.0	17 5.6	10.8	K	9.5	37 41.2	11.8		8.8	26.6	57.3	K*b*	9.4	48.4	42.1		9.4	36 1.8	41.2	
9.5	13.0	52.1		9.2	38 1.3	15.3	*b*	9.3	43.2	50.9		9.4	19 2.9	56.7	*b*	8.9	4.6	58.8	R
8.2	40.0	11.9	K*b*	9.5	39 42.9	37.1		8.8	59 10.9	56.2	K	8.9	47.0	1.9	K	9.5	23.9	55.3	
9.1	59.3	6.2		9.0	40 15.3	10.3	K	9.5	20.2	21.5		7.2	20 37.1	20.1	K	9.1	34.2	19.8	K
9.0	19 25.4	16.3	K	9.5	43.5	48.2		9.5	0 1.3	4.2		9.1	44.3	9.3	K	9.5	37 6.5	56.1	
9.2	20 8.0	51.5		5.7	41 23.2	9.4	K	8.0	12.4	37.5	L	8.3	21 54.1	21.5	K	6.5	38 43.5	41.5	K
9.5	29.2	45.1		9.5	53.3	50.3		8.9	16.0	59.5		9.5	22 4.4	49.6		9.3	50.7	12.3	
9.2	21 0.1	52.8		8.5	42 59.5	12.3	K	9.0	23.0	24.6	K	9.0	30.6	10.9	K	9.0	51.3	46.5	K
8.5	22 10.8	48.5	*B*	9.5	43 23.7	34.8		8.6	46.2	52.4	K	9.5	49.0	2.9		9.0	39 18.8	34.7	
9.4	23.8	53.4	B	9.5	35.3	8.8		9.5	59.2	29.5		9.5	55.0	8.2		9.4	30.1	28.8	
		+				+			+	+			+	+			+	+	
10 pr.		*30.94*	*3.34*	*10 pr.*		*31.29*	*3.30*	*10 pr.*		*31.64*	*3.25*	*10 pr.*		*31.99*	*3.16*	*10 pr.*		*32.22*	*3.09*

m	1°—2°	+16°		m	2°	+16°		m	2°	+16°		m	2°—3°	+16°		m	3°	+16°	
	201— 260				261—320				321—380				381—440				441—500		
9.5	39 30.2	12.6		9.2	7 36.4	2.1	K	9.3	32 7.4	38.1	Bb	9.5	54 57.5	55.8		9.5	18 5.7	37.3	
9.0	33.5	38.8		9.5	43.5	50.9	B	7.8	7.7	5.9	K	9.5	55 6.8	26.6	b	9.5	28.9	31.0	
6.0	40 19.1	24.8	Kb	9.3	8 15.2	56.5		9.5	25.0	52.6	B	9.5	56 39.7	42.2		8.3	19 27.7	8.7	L
8.2	30.2	18.0	K	9.5	19.1	54.4		9.5	29.0	46.7		9.5	58.5	50.2		8.5	57.4	30.0	L
8.5	40.2	39.8	K	9.3	58.7	13.2	K	9.5	33 3.5	7.7		9.5	57 16.8	24.4		9.0	20 5.4	19.1	
9.5	43 7.8	59.0		8.5	9 7.0	37.8	L	9.5	12.8	16.2		9.5	23.3	59.8		9.5	8.9	57.0	
9.5	19.5	23.2		9.5	16.1	51.7		9.5	35.7	26.6		9.5	58 11.2	30.8		9.5	14.3	55.0	
9.5	27.4	57.5		9.0	17.4	11.4	K	8.7	35.8	6.4	K	9.3	31.4	49.4		9.5	26.5	6.3	
9.0	45.5	35.4		9.5	51.0	9.5		9.1	49.2	12.5		8.8	33.2	54.4	K	9.5	52.1	47.7	
8.3	44 3.6	21.8	K	9.5	11 4.7	37.4		8.3	34 18.5	20.2	K	9.3	38.9	43.8		7.5	21 32.4	15.1	K
8.3	45 27.8	21.8	K	8.8	14.3	57.6	K	8.8	18.6	58.8	K	9.2	59 15.8	30.4		9.5	22 44.7	34.6	
9.4	40.5	31.1		9.5	32.0	51.2		9.2	21.5	48.3		8.3	56.5	21.7	K	9.5	23 18.1	3.6	
8.8	43.7	44.6	K	9.5	36.1	42.5		9.5	55.2	23.1		8.0	59.5	28.3	K	9.1	25.2	44.9	
9.5	46 0.4	27.7		9.5	45.7	23.1		9.5	35 8.5	6.4		9.5	0 48.5	66.1	B	8.3	53.4	13.4	K
9.0	51.2	45.3	K	9.4	45.8	0.9		9.5	10.0	46.7		8.4	1 27.5	20.7	Kb	9.2	55.4	39.9	b
8.5	53.0	51.2	K	9.5	12 3.3	1.2		9.4	27.7	31.1		7.8	32.9	41.8	K	9.5	24 5.5	43.0	
8.2	47 38.8	29.8	B	9.0	12.6	57.4		7.9	34.0	55.5	K	9.2	54.4	59.0	B	9.3	21.9	46.7	
9.5	48 0.1	18.1	B	9.5	54.1	49.2		9.3	38.1	1.0		8.0	2 10.9	14.8	K	7.3	47.0	6.5	K
9.4	9.5	25.3	B	9.3	13 27.4	29.9	b	9.3	40.1	13.1		8.8	55.4	44.9	K	9.5	25 3.5	24.6	
9.4	26.3	18.9	B	9.3	45.1	30.5		9.5	36 2.5	19.5		9.5	3 9.4	14.3		9.5	5.9	56.7	
9.5	29.6	17.7		7.0	14 35.0	12.0	L	9.5	37 33.2	2.6		9.5	30.5	45.7		8.9	24.9	50.1	L
8.4	53.5	48.2	K	9.4	52.1	44.0		7.8	40.7	23.3	L	8.5	4 5.5	45.2	K	9.5	27.9	15.5	
8.9	55.2	32.5	B	7.3	15 0.1	56.2	Kb	9.5	38 14.7	33.6		8.7	50.0	34.5	Kb	9.5	38.4	21.7	
9.4	50 6.7	5.2		8.3	31.3	3.9	K	9.5	16.5	0.0		9.5	5 10.7	28.3		9.1	56.4	50.1	
8.5	7.6	49.8	K	9.4	40.7	44.6		8.6	39 15.7	41.2	K	9.5	22 8	6.8		9.5	26 19.1	43.8	
9.3	25.5	59.0	B	9.5	16 8.4	5.4		8.7	19.5	35.7	K	9.4	6 1.7	50.1		9.2	45.9	44.3	
8.2	53.1	20.1	K	9.0	36.1	7.2		9.5	23.1	55.1		9.5	8.3	38.3		9.3	52.4	50.1	
9.5	51 10.0	45.7		9.0	17 3.0	11.1		8.8	36.2	41.2	L	9.5	25.8	1.9		9.5	54.8	43.2	
9.5	24.2	0.4		9.0	9.2	13.1		9.2	58.6	7.1		9.5	26.7	50.2		9.5	27 30.0	31.9	
9.5	52 33.9	53.0		9.0	46.5	59.5	K	9.5	40 11.3	48.8		9.1	37.3	2.2	b	9.5	37.0	24.5	
9.5	53 12.4	23.6		8.3	18 42.5	56.7	K	var	12.2	55.2	R	9.3	54.4	30.7		9.1	28 17.4	12.0	Rb
9.3	35.5	0.5	B	9.5	53.4	11.4		9.3	25.3	6.8	b	9.5	8 4.9	59.5		8.9	38.4	43.8	
9.3	55 22.8	56.5		6.8	19 33.8	0.3	K	8.8	25.3	29.3	K	9.5	8.3	36.9		9.3	42.5	14.6	
9.5	27.2	27.7		8.5	20 22.0	42.9	K	9.5	26.2	45.4		9.3	41.4	41.9	b	9.2	48.9	3.9	
9.2	38.7	30.1	K	9.5	44.8	4.2		5.7	41 13.1	51.5	K	9.5	58.9	41.4		9.3	29 25.9	30.4	
9.5	56 53.8	0.6		9.5	22 24.4	48.9		9.5	21.2	48.1		9.5	9 30.4	25.9		9.3	29.3	45.2	
8.5	57 47.2	56.9	Kb	9.5	33.0	29.9		9.5	22.2	2.7		9.3	10 7.3	2.4	b	9.3	32.7	42.1	
9.3	58 6.7	27.7	K	9.4	46.8	32.7		9.5	48.2	57.3	R	9.5	10.4	36.7		9.4	54.5	0.6	
8.3	26.6	10.0		9.2	23 30.2	53.4	L	9.5	42 42.8	51.0		9.5	23.3	31.4		9.5	30 0.3	41.8	
9.5	34.0	45.4		9.3	34.9	22.2	b	9.5	42.8	57.0		9.5	52.7	22.4		9.5	4.5	18.7	
8.9	39.1	24.2	K	9.5	35.1	31.0		9.0	43 3.7	19.3		9.5	54.9	48.1		9.5	56.9	15.1	
9.5	59 40.7	23.5		9.5	54.8	15.2		8.8	44 22.3	35.2		9.5	11 14.3	43.8		9.5	31 0.3	33.5	
9.5	44.4	52.6		9.5	24 19.4	14.1		9.5	34.9	30.8		7.9	48.5	57.9	K	9.0	7.4	42.0	
8.8	0 59.7	53.1		9.5	50.7	57.7		9.5	51.1	53.8		9.5	12 48.3	41.8		6.0	15.2	4.1	K
9.5	1 10.4	50.2		9.5	25 21.8	39.2		9.5	45 3.5	36.4		9.0	13 7.4	44.0		9.3	20.3	24.5	
9.5	18.7	3.5		9.2	57.2	22.4	b	9.5	14.8	3.0		9.5	24.4	23.5		9.2	21.7	58.6	
6.8	26.1	32.6	K	9.5	58.0	6.1		9.4	43.0	56.8		9.5	14 13.4	23.8		9.2	32 37.0	54.4	
9.0	2 0.0	58.3		9.3	27 2.4	51.7		9.3	46 26.8	35.3	b	9.3	18.6	56.2		8.9	44.7	41.3	
9.3	56.1	18.0		9.5	42.2	32.8		9.5	43.0	5.7		9.5	20.2	0.7		9.5	33 7.4	21.2	
9.1	3 1.6	51.4		9.4	28 6.9	57.6		9.5	47 8.6	35.4		9.5	46.3	56.7		9.5	37.4	51.8	
9.4	56.1	47.5	K	9.4	39.4	2.0		9.5	48 23.5	14.8		9.5	50.5	23.7		9.5	44.6	27.5	
8.3	4 33.8	1.2	K	9.2	29 22.7	14.1	b	9.5	28.1	43.3		8.6	56.6	3.3	K	8.7	53.2	29.2	K
9.4	5 9.7	55.2		9.4	26.8	51.7		8.8	56.1	38.4	K	8.5	15 9.3	2.2	K	9.5	56.0	26.5	
9.5	20.5	3.8		9.5	28.0	57.1		9.4	50 20.1	45.0		9.3	16.5	37.6		9.5	56.0	23.5	
8.9	44.8	14.1	K	9.5	35.7	18.5		9.1	37.9	56.3		9.4	39.8	2.8		9.5	34 3.4	31.1	
9.5	6 23.1	24.0		9.5	46.8	33.5		9.5	51 20.0	27.9	b	8.5	41.4	11.0	L	9.4	11.0	53.1	
9.5	28.6	55.8		9.4	30 44.8	50.9		9.5	56.2	19.6		9.5	43.9	19.3		7.5	24.9	49.2	K
9.5	42.4	5.4		9.5	31 43.5	43.4	B	9.5	53 57.2	59.3		9.5	16 14.3	41.8		9.5	44.3	8.9	
8.9	45.3	56.6	K	9.5	52.6	43.8	B	9.5	54 32.5	52.3		9.5	16.8	12.8		9.5	35 9.4	43.5	
9.0	46.1	47.8		9.4	32 1.9	46.9	B	8.8	45.2	58.9	K	9.0	17 13.4	37.6		9.5	18.0	22.6	
	+	+			+	+			+	+			+	+			+	+	
10pr.	32.59	2.94		10pr.	32.96	2.75		10pr.	33.26	2.56		10pr.	33.60	2.29		10pr.	33.85	2.05	

501—560

m	3ª		+16°	
	′	″	′	
9.5	35	20.2	1.7	
9.5		36.2	13.1	
9.5		39.6	50.9	
9.3		58.7	14.5	R
9.5	36	0.3	3.8	
9.5		38.2	25.1	
9.5	37	5.3	24.4	
9.2		52.5	31.8	
9.3	38	12.9	11.8	
9.5		28.9	20.1	
9.5		33.4	28.2	
8.4	39	22.0	15.6	K
8.2		45.3	30.5	K
7.6	40	44.1	0.9	K
9.2	41	41.0	40.7	b
9.2	42	9.4	48.7	
9.5		13.8	4.5	
9.5		34.9	26.6	
9.5	43	29.7	43.2	
9.1		33.5	46.6	Rb
9.5	44	1.9	52.6	
9.4		40.9	48.7	
6.1		53.0	54.1	K
9.3	45	18.5	15.5	
9.5		21.2	39.9	
8.4		31.4	29.3	Kb
7.0	46	12.5	11.3	K
8.3		20.6	54.3	K
9.0		49.4	34.1	B
9.5	47	2.2	41.1	
9.5		56.9	36.6	
9.5	48	29.3	8.2	
9.5	49	9.6	9.4	
9.3		33.2	23.5	
9.2		49.6	58.5	
9.3		57.1	4.1	
9.3	50	1.2	40.5	
8.7		28.2	42.2	K
9.2		32.2	20.0	R
9.0		38.9	29.4	K
9.5		53.7	57.6	
9.5	51	39.9	15.5	
9.5	52	3.8	10.8	
6.5		20.2	52.2	K
9.3		46.6	5.5	b
9.5		50.5	15.8	
9.4	53	16.2	52.1	
9.5		35.5	56.1	
9.1		45.4	54.2	b
9.0	54	18.2	27.6	
9.3		20.0	55.0	
9.3		28.1	14.4	B
9.3	55	4.8	51.3	
9.0	56	20.6	13.3	Kb
9.5		44.5	39.0	
9.3	57	25.0	47.7	
9.3	58	17.8	4.1	
9.4	59	27.3	8.0	
7.5		39.5	8.3	K
5.6		41.7	57.3	K
10pr.		+ 34.03	+ 1.83	

561—620

m	4ª		+16°	
	′	″	′	
8.0	0	31.4	53.6	K
9.5		34.6	49.9	
9.0	1	4.2	46.6	L
9.2		51.5	58.2	K
9.5	2	16.3	23.4	
9.0		47.1	47.1	
6.5		47.8	15.2	K
9.0	3	20.4	52.7	K
6.0	4	12.9	54.9	K
9.0		53.5	24.2	
9.5	6	0.8	29.3	
9.4		45.9	42.6	B
9.4	7	14.7	44.8	B
~~9.5~~		~~57.1~~	~~4.0~~	
9.5	8	33.0	8.7	
8.5	9	12.0	13.5	K
8.4		20.5	34.3	
9.2		37.6	59.5	R
7.3	11	36.8	10.6	K
9.5	12	13.6	33.5	
9.0	13	11.5	27.0	
9.0		19.5	44.9	K
9.4	14	5.1	54.5	
8.8		22.8	59.6	
8.0		26.1	26.9	K
6.0	15	6.8	27.6	L
8.0		9.5	16.5	K
9.5		14.9	5.8	
8.8		54.8	2.1	
9.0		55.8	3.6	
8.0	16	2.5	44.0	K
8.2		8.1	33.2	K
9.4		39.1	37.8	
9.4	17	25.4	19.3	B
9.3		25.9	20.5	
9.4		28.2	14.5	B
9.5		44.0	27.0	
8.3	18	4.9	30.7	K
9.5		11.9	11.4	
7.6		12.1	49.3	B
8.2		19.1	25.4	K
7.2		31.6	42.1	K
9.5		58.9	10.7	
9.5	19	22.7	24.2	
5.0	20	9.8	2.5	L
7.8		27.6	57.1	B
9.5	21	14.1	8.7	
9.4		31.9	45.0	
9.3		36.6	20.1	b
9.5	22	49.0	26.6	
9.4		52.0	32.0	B
9.2		55.3	56.5	K
9.5	23	26.1	37.7	
9.2		27.4	53.4	Kb
9.5		59.0	57.1	
9.3	24	2.9	16.1	
9.5		24.8	2.1	
9.2	25	9.3	12.3	B
9.2		10.6	8.9	B
9.0		17.9	26.4	
10pr.		+ 34.28	+ 1.46	

621—680

m	4ª		+16°	
	′	″	′	
7.5	25	20.9	1.3	K
9.0		44.3	26.3	
9.5	26	11.4	12.4	R
7.3		37.9	40.9	L
7.0		41.6	53.4	L
9.4	27	13.1	39.7	B
9.2		14.5	46.6	B
9.3		31.7	6.0	
1.1		36.1	12.9	K
9.5		39.5	14.5	
9.1	28	11.1	0.5	
9.3		15.3	27.4	
9.5		17.2	51.0	
9.3	30	41.9	53.3	
9.5		45.3	17.6	
8.8	31	0.9	26.7	K
8.8		34.3	13.4	
9.5		43.2	53.3	
9.2		53.8	6.2	
9.2	32	4.2	13.4	R
8.3	33	11.6	25.7	K
9.3		49.6	23.5	R
9.5	34	8.3	20.2	
9.3		27.9	46.6	
8.5		44.4	2.2	
9.5		54.6	46.9	
9.5	35	42.4	48.9	
9.5	36	44.0	38.9	b
9.0	38	28.6	1.8	
9.4		43.9	26.7	R
9.5	39	10.8	2.0	
9.5		40.9	37.0	
9.5		52.4	2.6	
7.3	40	21.6	22.8	K
9.5	41	36.7	7.6	
9.5		56.0	28.5	
7.0	42	0.6	56.9	K
9.4		5.1	30.5	B
9.5		18.1	35.5	
9.4	44	22.9	56.2	
9.5		34.0	53.5	
9.3	45	10.7	34.7	B
9.5		31.5	11.7	
7.5		40.7	48.6	Kb
9.3		43.9	28.0	
9.5	46	5.5	5.0	
7.5		35.3	8.3	K
7.0		59.8	23.8	K
9.4	47	53.8	20.1	B
9.5	48	10.1	19.5	
7.5		27.3	30.5	K
5.6	49	0.0	55.6	K
9.5		46.3	38.4	
9.5	50	3.9	46.8	
9.5		45.3	6.4	
9.5		48.4	42.7	R
9.3	51	9.9	26.9	
9.5		24.5	4.1	
9.3		30.8	35.9	a
9.1	52	27.8	53.6	K
10pr.		+ 34.43	+ 1.16	

681—740

m	4ª—5ª		+16°	
	′	″	′	
9.5	52	34.4	6.8	
9.5		44.8	11.6	
9.5		53.7	58.1	
9.5	53	16.5	23.3	
9.0		32.3	37.0	
9.5		42.6	22.2	
9.5	54	53.4	5.3	
8.8	55	41.2	55.0	K
9.2		44.3	15.9	B
9.4	56	8.6	46.4	B
8.9		35.3	57.1	
9.0		47.5	25.1	
9.4	57	4.8	32.8	
9.5		30.3	27.6	
9.5		59.7	2.2	
9.5	58	29.6	4.7	
8.3		38.6	37.4	K
9.5		53.0	47.9	
8.8	59	31.6	13.4	K
9.0		34.5	48.2	L
9.4		42.4	54.3	
9.5		56.0	4.6	
9.2	0	9.1	0.3	
9.3		40.8	10.5	
9.4		46.4	16.5	
9.1	1	36.6	4.2	b
9.5		36.9	10.9	
9.5	2	4.5	17.8	
9.5		5.8	16.3	
9.3		18.7	20.0	a
9.1		22.1	24.9	
9.4		22.9	22.3	
9.0		23.3	18.3	
9.5		25.0	19.6	
8.5		28.8	14.8	
9.5		35.5	7.2	
9.5		36.8	52.4	
9.5		41.8	10.2	
9.5		42.3	29.3	
9.3		46.9	24.1	
8.8	3	30.4	33.5	
9.5		43.3	29.0	
9.5		43.8	56.7	
9.3		48.3	24.2	
9.3		48.9	29.8	
9.3		57.8	3.1	
9.5	4	9.8	3.1	
9.5		15.6	24.6	
9.5		16.4	17.9	
9.5		24.3	39.9	
9.5		36.4	16.2	
8.8		51.9	41.5	
9.5	5	1.8	15.4	
9.4		54.6	48.5	
8.7		58.1	29.8	K
9.1	6	41.0	36.4	Kb
9.5		43.8	49.7	
9.5	7	48.9	19.7	
9.2	8	6.0	59.3	
9.4		11.8	39.2	
10pr.		+ 34.56	+ 0.84	

741—800

m	5ª		+16°	
	′	″	′	
8.3	8	16.4	51.7	K
7.8		45.0	10.7	K
9.4		54.5	54.2	
9.5	9	18.3	31.8	
9.3		20.0	17.2	
9.4		52.1	1.1	
9.1	10	23.2	56.9	K
9.2		27.9	28.5	
9.5		29.8	20.6	
9.4		30.1	6.3	
9.2		34.0	31.6	
9.5	11	1.1	57.0	
9.5		6.4	39.5	
9.4		7.8	12.1	
8.6		35.0	34.0	Rb
9.3		37.6	57.7	
9.5	12	13.8	14.4	
9.5		47.4	2.6	
9.5		57.9	9.6	
9.5	13	3.8	4.7	
9.5		32.0	40.4	
8.3	14	9.9	39.5	K
8.2	15	2.8	51.8	K
9.5		10.6	36.2	
6.8		16.7	33.1	Lb
8.0		20.6	21.3	B
8.4		47.0	25.5	K
9.2		47.6	22.5	
9.5	16	18.9	38.1	
9.5		20.4	9.5	
9.2		37.3	52.1	
9.5	17	12.3	40.9	
9.5		14.7	4.0	
8.7		16.3	30.5	K
7.0		44.7	33.3	Kb
9.2		49.9	34.2	K
9.3	18	0.6	13.0	
7.3		16.6	5.6	K
9.5		17.4	20.7	
9.5		41.3	44.9	
9.3		47.4	17.3	
6.9	19	47.0	19.9	L
8.2	20	1.0	29.4	K
9.3		6.9	7.3	
9.5		21.0	29.1	
8.0		29.0	17.3	K
9.5		42.5	23.9	
9.2		46.6	53.3	
9.5	21	10.5	18.3	
9.3		23.5	39.2	
9.5		33.5	52.7	
7.5		38.4	2.8	K
9.2	22	5.0	42.3	b
6.1	23	51.2	56.3	K
8.8		51.9	2.1	
9.2	24	25.0	46.2	
9.5	25	3.0	32.0	
9.5		16.8	48.0	
9.5		25.5	13.6	
9.5		29.8	53.0	
10pr.		+ 34.61	+ 0.63	

663 a

9.0	45	32.7	48.7	R

801—860					861—920					921—980					981—1040					1041—1100				
	5ᵘ		+16°			5ᵘ		+16°			5ᵘ		+16°			5ᵘ—6ᵘ		+16°			6ᵘ		+16°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	25	34.0	59.7		9.5	37	49.6	23.3		9.5	47	36.7	30.2		9.5	55	8.0	55.7		9.5	4	51.1	41.1	
9.5		42.5	16.7		9.5		50.5	46 0		9.5		37.5	52.9		9.5		10.5	9.8		9.5	5	19.5	30.7	
9.5	26	2.0	4.3		9.4	38	6.0	50.2		9.1		51.1	8.8		9.5		10.7	17.6		9.1		22.4	7.9	
9.5		24.8	29.9		9.5		12.8	55.7		9.5		52.0	49.6		8.8		15.7	59.4	K	9.5		23.2	9.3	
9.5		26.5	15.4		9.5		26.0	33.8		9.5		54.4	5.8		8.0		25.0	42.3	L	9.5		27.0	0.3	
9.5		33.0	38.0		9.5		27.5	50.3		7.5	48	28.5	20.0	K	9.3		28.0	4.5		9.0		31.6	33.0	K
9.4		50.5	25.6	*a*	8.6		52.8	31.3	K	9.0		42.0	58.9		9.3		39.1	7.8		9.5		32.3	42.4	
9.5		56.5	59.8		9.5	39	15.0	9.9		9.5		44.9	48.8		8.8	56	26.0	20.5	K	9.5		35.9	47.4	
9.5	27	0.6	26.2		9.5		18.1	59.6		9.5		49.0	51.7		7.8		28.0	39.6	K	9.5		39.8	8.7	
9.0		1.9	22.5		9.5		30.9	4.8		9.5		51.8	56.0		8.8		49.0	13.5	K	9.0		44.7	38.5	
9.0		1.9	10.5	K	9.4		32.2	43.8		9.2		56.0	22.3	K	9.4		56.6	22.4		9.5	6	4.8	47.1	
9.4		16.0	13.0		9.3		33.0	20.2		9.4	49	0.1	0.3		8.3	57	11.0	33.2	K*b*	7.0		22.5	4.2	L
8.6		36.4	2.9	K	9.5		38.0	6.5		9.4		9.5	59.3		9.5		14.3	20.0		8.7		26.9	45.3	
9.5		37.6	8.8		9.4		39.3	54.1		9.3		50.2	21.2		9.5		24.6	51.9		9.1		33.4	50.3	
9.5		52.8	9.6		9.5		40.3	26.1		9.0		51.7	3.9		8.9		28.0	35.7	K	8.8		33.9	51.5	K
9.5	28	4.1	26.7		9.5		51.2	9.3		9.2		53.5	13.5		9.5		46.3	27.5		8.0		34.4	47.5	*B*
9.5		5.5	33.5		9.2	40	0.1	53.8	*b*	9.4		55.0	15.5		8.5	58	7.8	49.8	K	8.3		40.8	40.6	*B*
9.5		8.6	16.4		9.5		13.0	28.8		*9.4	50	4.3	3.8		9.5		8.3	58.0		9.4		53.6	54.6	
9.1		12.4	7.1		9.5		18.2	29.2		*9.0		12.5	54.1		7.2		32.7	23.0	K	7.8		58.7	28.6	L
9.5		15.2	35.2		9.5		27.8	19.4		7.3		16.8	34.7	L	8.0		33.3	11.4	K	5.7	7	3.6	10.5	L
9.5		31.5	47.6		8.8		42.3	8.9	K	9.3		24.1	11.0		7.5		44.6	34.5	K	8.8		11.4	16.2	
6.2		39.9	55.4	K	9.5		44.3	39.7		9.5		25.6	57.1		9.3		52.8	59.7		9.1		13.3	29.2	
9.1		41.8	13.3		9.3	41	16.7	57.7		9.4		28.8	18.0		8.8		53.1	47.4	K	9 5		32.4	15.8	
8.9	29	8.7	27.8		9.4		51.4	4.0		9.5		32.0	39.3		8.2		53.6	44.1	K	9.2		32.7	40.6	
9.5		35.7	38.6		9.1		52.9	30.7	*b*	8.7		35.0	20.9		9.3		56.8	1.8		9.2		36.8	0.4	K
9.5		45.4	58.5		9.3		57.7	40.0		9.5		44.0	54.9		9.3		59.3	11.2		9.5		38.1	3.2	
9.2		47.1	52.9	K	9.4	42	12.6	48.5		9.3		48.2	54.7		9.4	59	11.6	26.6		9.4		50.4	2.7	
9.5	30	2.2	40.5		9.3		42.3	12.2		9.4		52.4	15.5		9.5		36.9	40.5		9.5		50.6	4.8	
9.4		9.9	42.3		9.5		43.0	56.8		9.0		58.7	58.7		9.5		37.7	59.9		9.3		52.1	9.7	K*b*
9.5		13.7	21.6		9.0	43	9.6	43.8		9.3	51	5.3	46.4		9.0	0	0.8	8.5	K	9.5	8	3.6	43.1	
9.1		24.8	51.7	K	8.9		16.0	43.6	K	9.5		6.5	28.2		8.6		2.0	5.4	K	9.5		11.5	12.5	
9.5	31	0.7	31.4		9.1		16.1	48.9		9.5		16.6	2.5		9.5		15.0	44.3		9.5		17.6	35.8	
9.5		31.8	56.1		9.0		18.4	46.5		9.4		21.9	8.9		9.5		28.4	44.1		9.4		34.5	31.0	
9.5		44.6	45.2		9.5		21.9	8.1		9.4		27.8	5.3		9.5		38.4	0.6		9.5		36.7	13.7	
7.8		54.0	19.9	*B*	9.5		37.7	35.0		9.3		51.3	15.9	K	9.2	1	2.3	41.5	K	9.5		42.0	30.8	
9.5	32	10.4	12.3		9.5	44	29.0	6.7		9.5		57.6	55.1		9.2		7.5	59.3	K	9.4	9	17.1	56.4	
9.0		16.0	51.7		9.5		29.3	44.9		7.0	52	3.0	16.2	K	9.5		10.2	54.2		9.5		21.5	10.6	
9.3		19.0	47.1		9.4		33.4	11.0		9.5		7.0	35.3		9.5		18.3	39.9		9.2		46.6	48.7	K
9.5		38.9	0.6		8.5		40.3	18.6	L	9.3		8.0	46.5		8.7		21.2	30.9	K	9.5		46.9	57.8	
9.5		42.3	30.9		9.0		53.3	16.1		8.5		22.4	48.7	K	9.2		21.7	26.4	K*b*	8.5		49.9	0.1	L
5.5		56.0	28.2	P	9.4	45	2.4	56.6		9.4		30.0	16.3		9.0		37.6	47.0	K	9.5		59.0	5.7	
8.5	33	19.0	9.3	K	9.5		6.2	56.6		9.5		33.1	22.4		8.7		42.5	27.7	K	9.4		59.1	9.4	
9.0		21.0	13.9	K	9.4		21.2	18.5		8.9		39.3	28.1	K	8.7		43.2	47.0	K	8.4	10	0.3	45.6	K
9.5	34	6.3	54.2		8.4		25.1	6.3	K	7.6		40.6	58.8	K	9.5	2	8.2	54.2		9.5		28.8	40.5	
9.5		16.7	46.2		9.5		28.6	50.0		9.0		48.7	40.0		9.5		17.9	34.9		9.5		39.5	51.8	
9.1		37.5	33.2		9.5		45.0	52.4		9.3	53	12.6	34.7		9.0		22.9	52.3		9.5		48.0	42.9	*a*
8.8		52.0	35.2	K	8.4		49.7	17.8	K	7.7		16.2	55.8	K	9.5		28.6	10.0		9.2		58.1	18.2	
9.5		56.7	55.2		9.4	46	15.1	11.0		9.0		16.3	5.9		9.5		45.0	47.5		8.7	11	4.2	37.9	K
9.1	35	3.0	42.8	K	9.2		17.0	22.9	K	9.5		19.9	12.5		9.2		45.9	16.7	K	8.2		10.6	13.9	L
8.5		7.0	37.8	K	9.5		38.0	26.0		9.2		27.3	54.1		9.5		50.5	38.0		9.5		17.0	29.3	
9.5		11.7	1.4		9.5		53.4	13.9		8.8		33.7	32.5		8.5	3	8.3	24.6	K	6.6		19.2	3.8	L
9.0		20.0	16.8		9.5		54.3	3.8		9.5		34.6	1.1		9.5		25.2	53.8		9.4		20.5	43.4	K
9.5		44.9	4.1		9.5	47	1.0	37.8		9.5		36.5	13.3		9.4		38.5	50.5		9.5		24.6	55.7	
9.2	36	18.6	7.9		9.5		1.5	34.6		9.1		37.8	30.5		9.2		40.6	37.6		9.2		33.8	38.5	K
6.9		31.5	1.0	K	9.5		14.3	45.4		8.8		42.7	40.0		5.8		41.9	9.3	K*b*	9.2		37.3	56.2	
9.5		37.4	7.0		9.5		16.5	59.0		9.5		57.5	14.2		9.5		48.1	33.6		9.4		38.7	16.8	*a*
9.2		42.3	19.0		9.5		26.3	18.6		9.5	54	36.2	4.9		9.5	4	14.7	39.7		9.5		48.9	15.9	
9.5	37	6.7	21.6		9.5		26 7	48.2		9.5		37.8	14.9		9.1		30.0	5.0	*R*	9.1		54.7	31.2	K
9.5		12.9	59.1		9.5		28.7	54.6		8.1		50.4	54.2	K	9.5		38.1	24.7		9.2		57.8	46.2	K
9.5		29.7	37.5		9 5		33.1	7.0		9.3		53.6	0.8		9.5		40.4	35.8		9.2	12	2.6	13.2	*a*
		+	+				+	+				+	+				+					+	—	
10pr.		*34.65*	*0.44*		*10pr.*		*34.67*	*0.25*		*10pr.*		*34.68*	*0.13*		*10pr.*		*34.68*	*0.00*		*10pr.*		*34.68*	*0.11*	

938 a				
9.5	*50*	*9.0*	*23.1*	*a*

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	6ᵃ		+16°			6ᵃ		+16°			6ᵃ		+16°			6ᵃ		+16°			6ᵃ—7ᵃ		+16°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	12	10.1	18.6		9.5	20	20.2	15.1		9.5	29	1.3	36.9		9.5	39	13.8	10.0		8.6	49	28.3	46.3	
9.5		31.7	52.9		9.5		31.8	25.8		9.1		9.1	40.8	K	9.4		26.6	17.0		8.8		33.6	50.2	
9.2		33.8	58.9	*b*	9.5		32.6	53.8		2.1		21.4	31.3	K	9.5		58.4	25.5		8.8		42.4	54.9	
9.2		42.2	9.0		9.4		40.0	25.7		9.5		21.5	36.9		9.3	40	16.9	50.2		9.0		52.7	3.9	K*b*
9.5		43.4	14.2		9.5		52.2	49.5		9.1		23.5	22.3	K	9.4		19.5	20.5		9.3	50	34.1	49.0	
9.2		43.5	29.7	K	9.5	21	40.8	22.2		8.6		33.1	5.8	L	9.4		22.2	17.4		7.9		46.3	13.3	K
9.5		57.6	59.9		9.3		42.4	42.2		9.0		45.2	55.9		9.5		26.5	41.6		8.0		47.0	19.1	K
9.2		59.3	19.9	K	9.5		45.1	13.8		9.3		59.2	32.1	K	9.5		27.5	12.4		9.3	51	1.5	36.0	
9.3	13	0.7	26.9		9.0		48.6	3.4	K*b*	9.4	30	34.6	11.5		9.5		28.7	48.4		9.2		2.4	15.6	K
9.0		7.0	19.1	K	8.9	22	6.4	48.7	K	9.4		40.6	25.5		9.4		30.0	41.6		9.0		24.5	21.4	K
9.1		11.7	31.5		9.5		9.5	8.7		9.5		56.8	47.1		8.8		53.1	37.1		9.5		28.9	2.7	
9.5		45.8	13.7		9.4		31.6	9.8		9.5	31	9.5	15.7		9.3		55.1	36.4	*a*	7.4		30.8	8.5	K
9.5		52.9	4.8		9.5		39.4	29.6		8.9		36.1	29.4		9.4	41	12.2	7.9		9.5		50.2	35.2	
8.8	14	13.1	12.9		8.2		56.3	23.6	K	9.4		42.5	35.8		9.5		12.6	30.8		6.0		56.3	16.2	K*b*
9.5		24.0	54.5		8.5	23	0.2	10.7		8.8		44.0	51.1		9.5		16.5	24.3		9.4	52	3.3	2.4	
9.3		31.6	13.2		9.2		12.1	46.9	K	9.5		58.1	27.9		9.4		24.4	40.9		9.3		7.2	42.7	
9.5		43.7	38.5		7.5		11.7	55.5	K	9.5	32	8.9	25.5		9.4		25.2	42.8		8.1		52.5	18.1	K
8.0		46.6	35.0	B	6.6		17.1	0.0	K*b*	9.5		28.7	55.6		6.5		29.6	22.1	L	9.5	53	5.7	16.2	
9.5	15	1.7	11.3		9.5		34.9	38.5		9.0		38.9	38.6	K	9.5		32.2	26.6		9.5		10.8	38.4	
9.5		5.2	21.9		9.2		50.0	57.3	*a*	9.5		43.1	16.0		8.0		49.7	36.6	L	9.5		25.0	42.5	
9.5		11.0	0.9		9.2		52.1	9.4		9.5	33	0.2	11.3		9.5		59.8	11.5		9.5		35.4	44.7	
9.2		12.5	25.4		9.0		57.0	56.2		7.3		0.4	31.8	K	9.5	42	1.3	54.5		9.0		49.8	22.4	K
9.5		54.6	36.0		8.7	24	10.3	37.8		9.3		7.3	53.7		8.8		16.1	22.6	L	6.5	54	11.2	52.8	B
9.5		55.3	14.1		9.5		14.1	31.7		9.5		26.2	37.0		9.0		25.4	19.4	K	9.5		13.7	5.9	
9.2		55.5	11.2		9.5		17.9	22.6		9.3		27.9	23.2		9.0		29.5	24.3		8.8		17.6	11.0	
9.2		56.1	3.6	K	8.8		24.1	45.5		9.5		28.0	24.0		9.5		37.6	30.3		9.5		17.8	12.1	
9.5		57.9	17.6		9.5		27.0	55.2		9.4		32.6	17.1		9.1		38.7	45.9	*b*	9.4		24.9	12.0	
9.5	16	8.3	52.3		9.3		29.2	16.5		8.7		35.5	53.8	K	9.5		52.2	11.8		9.5		26.2	8.9	
9.4		11.2	34.4		9.4		41.3	5.7		9.5		57.2	13.7		9.5		56.8	58.7		9.5		56.0	4.7	
9.5		12.4	10.9		9.2	25	6.6	35.5		9.2	34	1.0	49.4	K	9.2	43	5.9	36.6		9.2	55	7.7	44.7	
9.5		13.3	17.3		9.5		22.7	46.5		9.0		3.0	48.6	K	9.5		6.0	28.4		9.5		11.4	0.2	
9.5		20.0	25.1		9.2		39.1	28.4		8.9		3.6	50.8	K	9.3		29.0	10.6	K	8.4		33.0	23.7	
9.5		23.0	32.6		8.8		58.6	45.7	L	9.5		15.2	14.8		8.7		30.9	47.3	L	8.9	56	13.2	57.4	
9.5		30.8	24.5		9.2	26	2.0	10.6		9.5		28.0	3.9		8.5		44.2	11.2	K	9.5		14.9	33.2	
6.7		31.7	7.6	K	9.5		2.0	53.7		9.0		31.6	17.1	L	9.5		44.4	16.5		8.9		18.1	2.3	
9.2		47.3	11.0	*a*	9.4		17.8	12.0		9.4		39.2	0.5		9.3		58.5	54.9	K	8.7		18.5	22.6	
9.2		53.0	12.1		9.5		22.2	18.5		9.5		44.9	10.3		*9.2	44	11.6	10.4	K	9.4		19.3	23.5	*a*
9.5		53.0	28.6		8.2		24.2	29.4	*B*	9.0	35	10.5	56.1	K	9.3		33.8	26.4	K	9.5		30.4	5.6	
8.8		56.4	7.0	K	9.2		26.6	15.8	*a*	9.0		10.7	34.3	K	9.5		34.5	35.1		9.0		34.5	26.0	
9.5		57.1	55.6		8.8		27.5	14.2		8.2		14.0	55.2	K	9.3		58.9	23.2		8.7		54.0	57.4	K
9.5	17	20.0	36.9		7.3		33.1	18.4	P	9.5		20.3	17.2		9.3	45	5.6	16.3	K	8.0	57	1.1	35.4	*B*
9.5		22.1	49.8		7.8		33.6	52.7	L	9.1		21.2	38.8		9.5		18.2	10.9		9.3		17.4	28.1	
9.4		33.4	23.8		9.4		34.7	34.5		9.5		52.9	32.3	*a*	9.4		47.5	27.3		9.5		30.3	29.2	
9.3		52.2	4.5		9.5		37.4	7.1		9.5	36	8.8	28.2		9.5		49.7	19.5		9.5		43.9	14.3	
9.5		59.7	13.0		9.2		51.0	10.0		9.4		15.8	5.0		8.8	46	8.8	42.6		8.5	58	25.8	53.3	*B*
9.3	18	17.5	33.2	K	9.2		57.0	14.7		9.5		17.2	2.5		7.1		20.7	0.8	K	9.5		26.1	20.1	
9.5		17.8	12.9		9.4	27	5.3	21.4		9.1		29.7	50.8	*b*	9.4		26.9	59.1		9.5		27.2	59.9	
9.0		23.8	32.4	K	9.5		10.1	58.2		9.5	37	0.0	59.4		9.5		35.4	15.2		9.5		31.5	35.0	
9.5		28.0	58.2		7.7		29.5	33.1	L	9.5		17.2	53.7		9.5		38.3	21.9		9.5		38.4	59.7	
9.5		30.7	53.3		7.1		39.0	54.6	L	9.5		26.8	9.3		9.5	47	10.1	54.3		8.2		57.7	1.2	K
9.0		51.7	32.5	K	9.3		42.7	3.9		8.4		38.3	25.8	L	9.5		18.5	29.7		9.5	59	0.5	12.6	
9.5		54.8	2.4		9.0	28	3.3	57.0		9.5	38	1.5	45.6		9.5		18.6	22.8	B	9.3		7.2	25.8	K
9.5	19	16.8	13.9		9.4		21.1	54.9		7.1		26.1	55.3	L	9.5		25.9	59.3		9.5		24.0	53.7	
9.3		20.0	27.7		8.5		22.4	26.5	K	8.7		41.9	23.9	L	9.3		39.4	57.7		9.5		57.2	44.8	
9.5		20.9	52.7		9.4		38.3	37.7		9.5		45.1	33.2		9.5		48.2	39.9		8.6		58.9	51.6	K
9.5		56.5	31.3		9.4		41.3	27.9		9.3		51.7	0.1		9.5		52.6	15.6		7.5	0	2.6	22.2	K
9.1		58.2	18.8	*a*	9.5		46.4	47.8		9.5		52.6	56.9		9.3	48	14.5	59.9		5.8		2.7	9.5	L
8.5	20	6.8	7.6		9.5		46.7	22.9		9.5		53.7	6.7		9.2	49	4.4	12.7		8.0		25.4	42.6	K
6.5		8.0	20.0	L	9.5		47.5	13.4		9.5	39	2.9	31.4		9.4		9.5	21.9		9.5		41.5	55.1	
9.5		14.7	48.3		9.2		51.6	3.7		9.5		12.6	47.8		9.5		26.7	14.7		8.1	1	2.2	47.0	B
10pr.		*34.67*	*0.23*		*10pr.*		*34.66*	*0.37*		*10pr.*		*34.64*	*0.50*		*10pr.*		*34.61*	*0.62*		*10pr.*		*34.57*	*0.80*	

1316ᵃ			
9.5	44	9.7	9.5

40

m	7ᵐ	+16°	
	1401—1460		
9.3	1 10.3	23.0	K
9.4	14.8	0.2	
9.3	26.4	25.6	K
9.5	31.7	52.4	
9.5	36.4	34.0	
9.5	58.4	36.5	
9.5	2 7.2	11.3	
9.0	30.3	49.4	
9.5	33.1	58.4	
9.5	3 1.9	15.8	
9.1	34.4	21.5	*b*
9.5	59.1	6.9	
9.2	4 18.4	28.5	
8.7	22.8	18.6	P
9.4	30.4	56.3	
9.5	51.9	51.7	
5.5	5 4.4	24.6	Lb
9.5	7.8	35.7	
7.7	32.3	49.3	K
8.0	32.9	5.7	B
8.5	57.4	47.5	K
8.5	6 1.5	0.9	S
8.4	12.2	50.8	K
9.2	25.7	50.3	K
9.5	29.9	12.4	
8.6	45.9	55.0	K
9.5	59.4	3.8	
9.3	7 4.5	39.9	
8.6	37.9	59.1	
9.5	45.7	56.5	
9.4	59.5	2.1	
9.4	8 18.8	59.8	
7.5	25.4	22.4	K
9.3	29.2	57.4	
9.4	31.3	59.3	
8.5	49.8	32.5	K
9.5	58.4	18.9	
9.5	59.9	33.9	
9.3	9 5.4	46.6	K
9.0	25.8	1.5	
9.3	26.4	46.2	K
8.4	41.7	0.5	
4.1	46.1	47.7	K
9.3	10 13.0	9.5	
8.7	16.8	51.0	K
9.5	36.6	13.2	
9.0	11 6.4	21.9	K
8.0	52.4	24.2	R
9.5	12 12.4	49.3	
8.9	20.5	39.2	
9.4	26.9	46.2	
9.5	28.0	13.8	
8.5	58.4	14.8	L
9.5	13 2.6	1.3	
9.5	4.9	39.0	
9.0	7.2	59.0	
9.0	34.5	56.5	K
9.4	49.1	18.1	
9.1	49.3	1.6	K
9.5	59.7	52.9	
	+	—	
10 pr.	34.51	0.98	

m	7ᵐ	+16°	
	1461—1520		
9.5	14 5.8	39.2	
9.4	26.2	40.1	
9.0	52.0	16.2	K
9.2	56.2	6.8	K
9.5	15 8.9	15.2	
8.1	29.2	56.6	L
9.0	48.9	19.3	R
9.0	16 10.9	13.4	
9.5	42.0	40.6	
9.4	58.3	58.4	
9.5	17 10.0	11.7	
9.5	14.4	53.6	
9.5	19.6	45.2	
9.5	20.0	16.6	
9.5	40.4	22.8	
9.4	52.3	44.0	
9.3	18 1.5	21.2	
9.5	6.3	4.4	
9.5	22.8	53.0	
9.5	23.2	59.8	
9.0	44.0	24.2	
9.5	19 20.0	54.3	
9.5	24.5	2.7	
9.2	54.4	26.6	K
9.2	20 2.0	15.9	K
9.3	46.9	28.7	K
9.5	47.1	32.5	
9.3	47.9	12.0	K
9.2	21 8.1	22.1	R
8.1	11.4	27.7	K
9.5	28.8	31.6	
9.1	22 10.9	40.7	K
9.0	11.4	20.1	K
9.5	41.0	51.0	
8.7	45.0	55.0	K
9.5	56.3	53.6	
9.0	23 2.0	36.0	S
9.5	12.4	26.3	
9.5	14.6	36.1	*a*
9.1	21.7	7.2	*b*
9.5	37.9	53.5	
8.9	46.2	31.0	
9.5	24 28.0	7.7	
9.5	29.5	32.6	
*8.5	31.4	38.6	L
*8.0	50.4	16.6	K
9.5	52.9	32.7	
9.4	56.1	36.8	
9.4	58.3	31.4	B
5.7	25 19.9	8.3	Kb
9.5	41.3	35.4	
9.5	59.7	11.4	
9.4	26 1.5	53.8	
9.5	21.4	35.8	
9.5	40.5	18.7	
9.5	56.2	38.9	
9.5	58.4	31.9	
8.7	27 17.9	4.8	K
9.4	45.2	7.9	
9.5	47.6	25.0	
	+	—	
10 pr.	34.43	1.16	

m	7ᵐ	+16°	
	1521—1580		
9.5	28 0.1	10.0	
9.1	0.3	26.7	K
9.5	7.4	45.2	
8.6	12.9	23.2	K
9.5	13.4	31.2	
9.3	54.2	3.2	Kb
9.2	29 37.6	3.4	K
9.5	40.1	8.3	
8.9	30 4.7	53.7	
9.5	14.3	36.4	
8.8	37.9	25.0	K
9.2	44.4	29.6	K
9.5	44.8	48.0	
9.5	47.4	53.3	
9.5	31 7.0	19.3	
9.2	25.1	58.3	
8.7	26.5	22.0	K
9.5	32 22.2	51.1	
9.5	25.5	16.6	
9.2	52.8	24.6	K
9.5	33 29.8	37.0	
9.0	35.7	26.6	
9.5	34 43.1	49.3	
9.3	44.5	44.1	
9.2	35 9.3	21.4	
8.9	12.3	10.9	
9.0	22.0	35.9	
9.4	36 29.5	11.9	
8.0	44.7	14.5	L
9.5	58.5	52.1	
7.7	37 51.3	46.6	Kb
9.0	38 39.2	41.8	K
9.5	40.7	52.5	*a*
9.2	54.0	54.0	K
9.3	39 18.5	48.6	K
8.2	19.4	3.5	L
9.2	24.7	57.8	K
9.2	40 11.5	58.0	K
9.5	27.0	6.7	
9.0	34.5	55.1	K
9.5	50.4	46.2	
9.5	53.6	12.0	
9.0	41 1.7	27.2	
9.3	7.5	36.2	
9.5	38.0	58.8	
9.2	40.2	56.0	K
9.5	53.7	47.8	
8.5	42 23.4	20.3	K
9.0	25.3	18.9	K
9.4	54.1	27.6	
9.2	59.5	25.8	K
9.4	43 0.3	21.2	
9.3	26.7	13.7	K
9.2	28.2	26.1	K
9.3	44 24.2	14.5	
9.2	40.0	25.9	
7.8	45 4.0	5.1	*B*
9.5	19.9	33.8	
9.5	27.5	42.1	
7.0	42.0	24.8	L
	+	—	
10 pr.	34.33	1.38	

m	7ᵐ	+16°	
	1581—1640		
9.5	46 11.9	47.7	
9.4	15.8	8.2	
*9.2	38.1	53.5	
9.5	47 2.6	56.2	
8.5	6.7	53.0	K
9.0	35.9	24.8	
9.2	57.5	47.3	
9.5	48 8.6	20.0	
9.0	26.4	29.3	
6.0	45.7	9.9	Lb
9.5	46.5	8.8	B
8.9	47.5	12.1	K
9.5	49 20.1	59.7	
9.5	22.5	30.7	
9.5	30.0	5.2	
9.1	58.9	8.1	K
9.3	50 10.7	21.7	K
6.0	14.5	53.3	L
9.1	17.8	50.5	
9.3	24.4	27.6	K
9.2	40.5	25.6	K
9.5	51 24.4	27.5	
9.5	53.9	25.6	
9.0	58.9	21.8	K
9.3	52 0.4	20.3	K
8.7	2.5	3.7	K
9.5	12.9	13.8	
9.3	17.5	5.3	K
8.0	27.4	59.9	K
9.0	46.5	38.0	
8.3	47.0	34.5	
6.4	53 14.7	50.2	Kb
9.5	29.1	56.0	
9.0	45.5	3.1	K
9.5	54 0.3	4.6	*B*
8.5	22.4	17.2	L
9.1	30.7	18.5	
9.5	30.9	40.3	B
9.5	51.2	40.6	
9.5	55 3.2	41.0	B
9.4	13.6	42.5	
9.4	32.3	10.1	B
9.4	41.5	12.6	
9.5	48.9	17.9	
9.5	56 12.0	49.0	
9.1	22.4	11.3	*b*
9.5	42.9	32.0	
9.3	54.0	50.4	
9.5	58.2	53.7	
9.2	58.2	46.3	
9.3	57 15.7	0.9	B
9.1	37.1	54.2	K
9.5	44.0	52.8	
8.8	53.8	48.0	K
9.5	58 23.5	43.3	B
9.5	47.4	8.6	
9.5	59 6.7	25.5	
9.5	10.4	44.2	
9.5	16.7	45.8	
9.5	22.0	55.3	
	+	—	
10 pr.	34.21	1.58	

m	7ᵐ–8ᵐ	+16°	
	1641—1700		
9.5	59 52.7	25.0	
8.5	53.0	50.0	K
9.1	0 11.4	53.2	K
9.4	17.0	20.7	
9.0	49.2	27.3	
9.4	1 3.9	43.9	
9.1	22.5	58.4	
9.5	56.4	37.5	
9.5	2 0.8	5.9	
9.4	26.3	14.9	B
8.3	42.4	46.6	K
9.2	47.0	59.6	K
9.5	48.2	11.7	
9.1	54.6	11.8	K
9.3	3 15.7	34.1	B
9.5	20.3	2.8	B
7.2	22.5	37.6	K
8.3	34.2	32.8	
7.5	34.5	57.0	K
9.3	40.6	54.9	
9.5	4 13.0	23.8	
6.6	45.0	56.6	K
9.0	45.5	13.0	
9.4	49.4	39.7	
8.8	5 13.6	52.0	K
9.5	23.1	39.7	
8.5	36.4	4.0	L
9.5	6 1.9	3.6	
7.5	47.4	30.9	K
9.5	53.6	53.8	
8.9	56.4	16.7	K
9.4	7 33.3	7.6	
9.0	36.0	5.5	K
9.2	55.0	57.9	K
9.5	8 10.2	10.8	
9.5	10.6	45.9	
9.5	13.4	57.5	
9.3	9 51.7	56.7	K
6.5	10 3.2	7.1	K
9.5	17.6	52.9	
9.5	30.6	29.0	
9.5	34.2	9.0	
9.5	35.2	5.8	
9.5	37.1	53.6	
9.5	43.6	57.0	
9.5	52.0	4.8	
7.5	56.1	34.4	K
9.5	11 24.1	7.0	
9.5	26.5	4.8	
9.3	27.7	26.5	K
9.5	45.6	5.7	
8.2	49.1	41.0	Kb
9.2	12 9.4	19.5	K
9.5	25.0	53.6	
9.3	38.1	29.6	K
9.2	41.9	20.6	K
9.3	54.0	53.5	*a*
9.0	57.7	43.8	
9.5	13 21.2	4.1	
9.4	31.2	51.9	
	+	—	
10 pr.	34.09	1.76	

1505 a				
9.7	24	49.4	14.5	B

1582 a				
9.5	46	36.0	54.9	

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	8ᵃ		+16°			8ᵃ		+16°			8ᵃ		+16°			8ᵃ—9ᵃ		+16°			9ᵃ		+16°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
9.2	13	53.8	24.0		9.5	26	16.4	14.5		8.8	40	7.1	15.3		9.5	53	0.0	43.7		9.5	11	13.9	39.3	
9.2		56.1	18.8		9.5		40.7	15.7		9.5		18.4	25.0		9.5		10.8	4.3		9.5		24.6	51.3	
9.3	14	2.7	25.9		8.7	27	9.1	13.2	K	9.5		34.0	24.0		9.5		22.6	58.5		9.2		41.9	11.1	K
6.8		19.6	37.3	B	9.5		18.2	9.1		9.5		52.1	46.6		9.5		44.4	28.0		9.3		50.7	44.0	K
9.4		46.3	0.6		9.2		22.5	5.8	K	9.5	41	13.4	0.2		9.5		47.4	21.1		8.8		59.2	33.2	
9.3		48.9	49.5	B	9.5		28.4	43.7		9.5		18.1	43.1		9.5	54	15.0	40.6		8.8	12	3.4	5.0	K
9.5	15	7.8	3.5		9.4		38.3	26.0		9.4		59.3	57.0		9.5		28.3	39.4		9.3		19.4	7.6	K
9.4		8.5	33.6	B	9.2		47.6	15.4	K	9.4	42	5.0	51.4		9.5		54.2	10.2		9.5		21.4	3.4	
9.5		12.0	47.0		9.0	28	6.7	12.4	K	9.5		5.4	8.3		9.3	55	0.1	55.1		9.0		37.2	45.8	K
9.4		33.7	32.4		8.1		11.0	48.9	B	9.4		40.6	17.5		9.5		16.4	39.7		9.5		43.1	17.6	
9.5		49.7	35.9		9.5		18.0	43.0		8.9		50.5	26.5	K	9.3		20.7	4.4	K	9.2		44.6	5.9	K
9.5		58.1	44.6		9.2		48.0	9.2	K	9.5		52.9	1.6		9.5		26.4	21.1		9.5	13	57.9	11.7	
9.0	16	1.1	46.7	K	9.5		53.9	34.1		8.0	43	4.1	33.1	K	9.4	56	7.4	24.9		9.5	14	1.6	19.4	
9.5		45.0	56.3		9.5	29	4.7	13.0		9.1		33.6	43.0	K	9.5		22.5	29.1		9.5		8.4	52.3	
9.2		45.9	4.4	K	9.5		27.0	3.9		9.5	44	17.7	53.0		9.5		24.5	59.7	B	9.5		18.4	33.6	
9.5		46.4	26.5		9.0		35.1	29.2		9.4		27.4	59.0		9.4	57	1.7	38.8	R	8.2		44.9	23.6	K
9.5		51.4	8.8		9.5		35.9	32.7	α	9.5		48.9	33.9		9.5		12.6	3.7		9.4	15	4.1	41.0	
9.5		53.1	23.3		9.5		48.4	37.6		9.2		49.4	21.6		8.7		18.7	29.1	K	9.5		19.0	47.0	αB
9.4	17	5.2	16.8	B	8.8		59.0	44.9	K	9.2		49.8	57.7	K	9.1		26.8	28.1	K	9.2	16	24.3	51.1	*b*
9.5		22.2	57.6		9.4	30	0.7	22.3		8.3		50.9	54.6	K	9.5		39.0	3.0		9.5	17	32.1	28.1	
9.2	18	20.9	3.6		9.5		1.4	41.0		9.5	45	27.5	12.8		7.5	58	8.0	26.3	K	9.5	18	19.8	21.1	
9.5		25.4	36.8		9.5		26.1	55.9	B	9.5		32.4	39.6		9.5		15.7	25.3		9.5		29.9	27.7	
9.5		34.4	42.7		9.4		27.7	1.1		9.1		44.2	34.1	K	9.4		36.4	28.7		9.5	19	24.6	29.5	
9.3		37.1	14.6		9.5		50.9	14.1		9.0		53.4	29.0	K	9.5		41.4	19.1		8.7		40.2	22.5	S
9.5		37.1	40.8	B	9.5	31	5.9	5.0		9.5	46	23.4	7.4		9.3		41.5	54.2		9.3		44.2	9.5	αB
9.5	19	13.7	40.0		9.4		12.9	20.2		9.2		26.9	8.3	K	9.3		57.2	8.9		9.4		51.8	9.7	αB
9.0		32.2	22.3	K	9.4		25.0	5.7		9.0		28.2	12.7	K	9.5	59	3.4	55.1		9.5		55.2	11.8	
9.0		35.4	43.1		9.5		27.9	24.4		9.3		43.1	21.0		9.5		44.4	41.2		9.4	20	19.6	44.7	
8.7		41.6	30.9	K	8.0		30.1	39.2	K	9.3		43.2	57.8		9.3		53.8	51.6		9.5		37.4	26.3	
9.5		47.4	39.8		9.5		56.6	52.8		9.3		47.6	25.8		9.5	0	28.4	10.4		9.5		44.2	31.5	
8.6		49.4	47.0	L	9.5	32	56.9	7.5		9.5		48.0	22.6		9.0	1	23.9	23.5		9.5		51.4	30.7	
9.5	20	3.1	20.2		9.0	33	0.9	1.1		9.3		59.6	23.0	αB	9.4		28.2	55.1		9.5	21	16.6	41.5	
9.2		21.7	31.4	K	9.3		5.2	14.4	B	9.3	47	3.0	46.4	B	8.9		33.6	40.6	K*b*	9.5		22.4	25.3	
9.1		35.9	48.0	K	9.5		8.4	10.2		9.5		5.4	34.2	α	8.5		45.2	2.8	K	8.6		23.5	0.8	K
9.4		45.4	19.2		9.0		25.9	45.8		8.4		6.9	45.9	K*b*	9.4	2	4.8	57.1		9.0		41.0	58.8	*b*
9.0	21	17.7	41.7	K	8.9		27.0	50.1	K	9.1		23.2	33.8	K	9.5		20.6	19.4		9.5		57.7	5.9	
9.1		26.6	8.2		9.5		29.0	42.1		9.5		28.1	59.0		8.5		25.8	11.4	K	9.5	22	8.9	31.6	
8.3		41.6	0.5	L	9.5		54.8	55.5		8.2		58.6	15.9	K	9.5	3	12.9	5.0		8.9		21.6	4.8	
9.1		45.9	35.1	K	9.0	34	5.4	14.7	K	9.5	48	35.9	34.9		9.5		17.5	58.3		9.2		35.6	2.7	
9.3		46.0	36.8	αB	9.2		15.7	7.4	*H*	9.3		41.2	54.1		9.2		23.6	10.4	K	9.5	23	1.5	40.6	
9.5	22	17.1	11.5		9.0		30.4	29.2		9.5		44.7	16.6		9.4		47.1	47.6		9.5		15.7	39.9	
9.5		27.4	17.8		8.0		43.7	58.0	B	8.1	49	11.0	50.2	B	9.5		48.9	22.2		9.5		18.0	35.0	
9.0		37.1	36.5	K	9.2		46.2	7.4	K*b*	8.0		26.8	47.5	*B*	9.5	4	13.4	18.3		9.5		38.7	5.1	
9.4		37.6	23.6		9.3		59.4	58.4	K	6.1		28.5	7.5	L	9.5		32.4	34.2		7.5		39.7	25.2	K
9.4		52.2	22.3		8.6	35	57.7	27.0		9.3		40.0	17.3	αB	9.5	5	25.5	2.8		9.5	24	22.6	52.7	
9.5		59.9	55.5		8.5	36	15.9	26.0		9.5		44.9	25.0	B	9.5		34.4	7.3		9.5		44.4	27.9	
9.3	23	13.4	42.5	K	9.2		16.3	55.8	B	9.0		59.4	40.5		9.5		39.9	46.8		9.4	25	4.9	30.1	
9.5		14.8	49.3	B	9.3		23.5	25.9	α	9.2	50	4.1	56.9	K	9.0	6	22.2	44.0	K	9.2		7.5	22.5	K
9.5		26.4	43.8		9.4		25.1	48.3	B	9.5		24.0	14.5		9.5		39.9	2.7		9.5		21.4	43.2	
8.2	24	8.1	42.0	B	9.4	37	1.2	0.1	B	9.3		28.0	6.7		8.0		54.0	35.1	K	9.3		33.4	12.2	K
9.0		13.1	15.4		9.3		17.1	54.3		9.5		59.4	12.8		9.5	7	33.9	28.2		9.5		52.4	59.9	
9.4		15.5	58.8		9.5		25.0	55.5		9.3	51	24.4	8.7	K	9.2	8	15.9	3.1	K	8.7		54.2	8.0	K
9.5		20.0	18.6		9.5		41.1	32.7		9.5		45.7	32.5		9.5		55.8	10.0		9.2		58.2	9.7	K
8.0		28.1	13.3	L	9.5	38	6.7	19.3		9.4		47.7	7.7	B	9.5	9	8.0	35.0		9.5	26	50.4	3.1	
9.5		46.5	8.5		8.8		12.1	33.1		9.1		50.3	3.6	K	9.5		40.6	44.8		9.3	27	31.6	54.8	
9.3	25	8.0	8.5	K	9.3		44.0	22.0		9.3		54.3	7.2		9.4		58.9	55.5	K	9.5		44.4	44.6	
9.5		8.4	55.3		9.5		56.9	24.3		9.5	52	7.7	23.5		9.2	10	2.7	3.8	K	7.8	29	8.1	54.1	K
*9.3		13.4	18.2	K	9.5	39	5.6	55 8		9.4		26.7	20.0		9.3		8.9	11.1	K	8.8		11.4	8.8	R
9.5	26	4.6	56.0		9.5		45.4	43.5		9.3		43.0	42.2		9.5		21.4	32.3		9.5		16.6	1.7	
9.5		13.0	27.2		9.5	40	2.9	25.0		9.5		56.2	40.6		9.5		32.0	23.1		8.7		42.0	6.5	K
		+	−				+	−				+	−				+	−				+	−	
10pr.		*33.96*	*1.92*		*10pr.*		*33.83*	*2.06*		*10pr.*		*33.69*	*2.23*		*10pr.*		*33.51*	*2.37*		*10pr.*		*33.25*	*2.57*	

1732 α					
9.5	20	20.1	34.2		
1758 α					
9.6	25	53.9	9.0		B

2001—2060

	9ᵘ	+16°	
m	′ ″	′	
9.5	30 52.4	39.8	
9.5	31 13.7	13.8	
9.5	48.8	36.6	
9.5	32 7.7	41.4	αB
9.3	11.5	59.2	b
9.5	21.4	14.2	
9.5	41.9	41.1	αB
9.3	42.1	56.0	
9.4	33 15.0	49.8	B
8.0	48.9	24.9	L
9.2	34 15.6	56.4	K
9.5	35 7.6	28.8	
9.5	13.5	58.3	
9.2	14.9	24.3	Kb
9.5	36 33.6	28.8	
9.3	37 18.4	55.5	
9.5	31.2	21.1	
9.4	40.4	0.5	
9.0	38 10.8	53.6	K
9.5	16.1	35.6	B
9.5	23.0	20.1	
9.0	36.1	13.4	K
9.5	52.4	41.8	
9.3	39 7.2	7.9	
9.4	11.6	24.9	
8.7	13.0	11.6	Kb
9.5	22.8	16.6	
9.5	38.9	14.1	
9.3	40 13.8	28.4	
9.2	51.2	46.8	K
9.5	53.9	25.6	
8.4	58.7	13.9	
9.5	41 40.0	11.4	
9.5	57.4	23.9	
9.5	42 4.9	18.3	
9.5	5.2	10.0	
9.0	33.8	59.6	Kb
9.5	47.7	8.1	
8.5	43 16.8	59.9	K
9.3	50.4	41.8	K
9.5	44 23.2	35.4	
9.5	23.9	11.4	
9.5	45 0.9	14.5	Rb
9.5	28.7	41.8	
9.5	36.2	42.3	
9.0	38.6	29.8	
9.2	46 0.7	8.3	αB
8.2	31.4	43.3	K
9.0	48.5	52.5	K
8.9	47 1.6	14.1	Kb
9.5	44.1	7.7	
9.5	50 1.2	28.0	b
9.5	31.7	44.0	
9.5	51 30.6	52.7	
8.5	52 1.3	52.3	K
9.5	8.7	6.5	
9.4	11.6	28.8	
9.5	33.6	52.0	
7.5	39.6	33.3	Rb
9.5	57.6	38.8	
	+	—	
10pr.	32.98	2.75	

2061—2120

	9ᵘ—10ᵘ	+16°	
m	′ ″	′	
8.0	53 27.5	23.1	K
9.5	30.3	27.3	
9.0	54 9.1	38.5	B
8.3	9.5	3.5	L
9.5	19.8	32.0	
9.5	35.0	54.8	
8.8	37.4	44.6	K
9.0	44.4	13.8	R
9.5	55 5.7	57.2	B
9.1	17.8	59.9	K
9.5	56.6	22.0	
9.3	57.3	55.0	K
9.5	56 0.7	1.3	
9.5	57 19.3	6.2	B
9.5	35.4	49.0	
9.5	47.8	35.4	
6.9	48.9	26.7	K
9.5	58 34.5	26.7	
9.4	56.9	8.3	
8.6	59 46.7	59.9	K
9.5	0 24.6	25.5	
9.5	37.0	12.6	
9.5	38.3	56.4	B
9.5	39.1	52.4	
9.5	55.3	24.8	
9.4	1 31.0	50.5	αB
8.5	42.8	3.9	K
8.3	50.9	38.9	L
9.5	51.9	17.0	
8.3	2 49.4	45.2	K
7.7	51.3	25.8	K
8.8	3 16.2	13.4	K
9.0	4 34.9	34.8	
9.5	49.5	59.2	
8.9	5 21.4	57.4	K
8.7	27.0	3.9	K
9.5	54.4	8.7	
7.2	6 40.6	51.8	K
9.5	41.4	35.2	
9.2	45.1	57.0	R
9.5	7 4.6	52.3	
9.5	8.4	39.0	
9.5	13.4	25.1	
8.5	8 9.4	7.6	K
9.0	46.0	44.5	K
9.3	9 25.4	14.1	K
9.5	30.1	39.3	
9.5	34.4	26.2	
9.4	11 3.3	37.5	
8.8	49.8	29.3	K
9.5	12 25.3	16.8	
8.9	32.4	53.4	Kb
9.4	13 45.6	30.5	αB
9.2	57.8	15.5	
9.5	14 41.3	33.8	
7.3	57.7	5.1	K
9.5	15 14.0	58.6	
9.5	16 40.8	28.6	b
9.4	17 4.8	12.4	
9.2	18 25.0	8.6	b
	+	—	
10pr.	32.66	2.91	

2121—2180

	10ᵘ	+16°	
m	′ ″	′	
9.2	18 51.9	59.6	K
7.5	19 40.8	31.0	Kb
7.0	20 39.8	31.3	K
9.4	50.8	18.6	
9.4	21 40.0	56.7	
9.1	22 9.9	0.7	b
9.4	23 6.3	40.0	
9.5	32.2	32.1	αB
9.5	24 42.4	6.2	
9.2	42.6	52.9	
9.3	25 18.3	26.3	
9.5	26 3.3	35.9	
9.5	8.3	28.3	
9.5	42.2	0.1	
9.5	27 4.8	33.5	
9.2	21.3	43.2	K
9.5	37.2	48.8	
8.7	28 23.0	37.8	B
8.5	46.7	47.1	K
9.5	58.3	14.9	
9.2	29 57.7	3.7	
9.3	30 24.3	52.4	
9.3	59.8	31.7	
6.5	31 8.0	53.0	Kb
9.5	13.3	18.3	
8.1	14.9	44.1	L
9.5	21.5	20.5	
9.1	47.2	5.3	K
9.4	47.9	38.9	
8.2	49.6	46.4	K
9.5	32 20.7	21.3	
9.5	33 19.2	45.1	
9.3	34 12.2	37.7	b
9.5	32.7	18.2	
9.4	50.7	10.7	
9.5	35 34.1	11.8	αB
9.5	51.7	38.9	
9.5	36 36.6	5.3	αB
9.3	38 4.9	52.8	
9.3	22.7	40.2	
9.4	38.2	38.8	
9.5	39 3.5	35.9	
9.5	16.7	36.1	
9.5	41.5	40.2	
9.1	46.7	12.7	Rb
9.0	40 2.7	15.8	
9.5	53.0	23.7	
9.5	57.7	23.7	
9.5	41 25.7	47.8	
8.8	38.8	37.2	
9.4	50.6	11.8	B
9.4	42 0.4	13.8	αB
9.5	10.6	14.5	αB
9.4	47.2	16.6	
7.7	43 19.3	49.2	K
9.5	28.2	27.2	
9.5	39.3	59.2	
9.4	42.0	0.9	
9.4	44 10.7	58.1	
8.0	19.8	51.7	K
	+	—	
10pr.	32.20	3.10	

2181—2240

	10ᵘ—11ᵘ	+16°	
m	′ ″	′	
8.8	44 29.0	56.1	K
9.5	45 5.0	49.4	
8.8	15.7	34.3	
9.1	46 7.2	27.5	b
9.0	14.6	58.1	K
7.9	48 23.8	55.2	K
9.5	30.0	3.7	
9.5	49 17.3	2.8	
9.4	30.2	23.5	
9.5	51.2	24.0	
7.3	57.7	31.9	K
9.5	50 4.7	21.8	
8.7	30.0	15.5	L
9.4	31.6	3.5	
9.0	36.7	26.8	L
9.5	49.2	51.4	
9.2	53.3	52.9	K
9.5	51 30.2	3.8	
9.5	36.5	41.2	αB
7.7	40.7	19.8	K
9.2	52 17.7	6.5	K
9.0	53 4.7	12.8	Kb
9.2	21.3	44.7	B
9.5	54 27.6	11.2	
9.1	55 5.2	51.8	b
8.7	56 28.8	38.1	B
9.4	30.2	21.3	
9.2	51.5	48.8	
9.5	57 11.4	6.6	
9.5	52.7	14.2	
9.5	58 47.0	20.3	
9.1	59 27.6	5 6	L
9.5	41.3	49.0	
9.5	56.7	48.2	
9.5	0 44.3	51.2	
9.1	50.2	33.4	b
9.5	53.4	4.5	
9.5	1 7.1	59.7	
9.3	10.7	32.5	
9.4	19.6	36.5	
8.5	2 3.7	39.6	K
9.5	7.1	20.0	
9.1	14.6	33.1	
7.0	25.6	41.1	K
9.5	3 12.9	52.6	B
8.7	20.2	2.4	Kb
9.4	43.9	31.9	B
9.4	4 57.7	31.0	
9.3	5 0.0	53.8	B
8.4	1.5	59.7	B
9.4	21.1	36.2	
9.4	6 6.2	3.3	B
9.3	12.4	56.3	
3.3	38.0	13.9	K
9.0	46.8	18.6	K
9.4	8 12.8	13.9	B
9.4	19.5	52.6	
9.4	23.0	3.0	
9.3	9 15.9	13.8	B
9.5	25.9	14.0	B
	+	—	
10pr.	31.76	3.22	

2241—2300

	11ᵘ	+16°	
m	′ ″	′	
9.5	10 3.1	45.1	
8.5	38.1	46.2	K
9.2	11 14.4	24.0	b
9.5	30.8	15.1	
9.4	12 5.8	33.1	
9.3	13 6.7	23.1	
9.5	31.4	1.8	
9.5	14 17.5	0.3	
8.0	15 20.3	21.2	L
9.3	21.8	23.1	B
9.2	50.4	48.0	K
9.4	55.0	36.0	
9.5	16 18.3	3.8	
8.0	52.3	41.1	K
9.5	17 9.1	29.1	
9.5	38.2	55.9	
9.4	18 7.5	1.6	b
9.3	46.4	57.5	K
9.5	52.0	13.9	
9.5	19 15.3	5.5	
9.3	23.1	47.0	K
9.2	20 7.9	49.7	K
9.2	10.8	6.6	
9.4	24.4	41.1	
8.8	21 28.0	43.9	K
6.2	22 9.9	13.0	Kb
9.5	23 49.7	53.9	
9.3	26 11.5	30.1	b
9.3	27 29.0	49.9	K
9.2	46.3	43.9	K
9.5	28 2.1	50.6	B
9.1	58.4	3.6	b
9.5	29 28.3	17.3	
9.5	31.3	45.6	
9.5	34.0	30.5	
9.5	30 24.4	9.7	B
8.8	25.8	34.8	K
9.5	32.1	58.0	
9.3	58.0	19.9	
8.4	31 13.3	13.2	K
9.2	35.0	21.6	K
9.5	33 29.5	25.1	
8.8	34 22.0	36.5	K
9.3	35.1	54.8	
9.5	35 40.2	4.9	
9.5	58.1	3.7	
9.5	58.8	34.1	
9.5	36 6.3	32.1	
8.5	37 34.2	7.7	Kb
8.8	51.3	31.7	
8.8	53.6	37.0	K
9.5	39 59.5	59.0	
9.5	40 2.6	2.3	
9.5	8.8	21.7	
9.5	27.3	25.1	
7.2	41 32.6	55.7	K
8.7	34.8	3.8	
9.5	42 19.2	32.3	
9.5	30.6	8.2	
8.9	43 10.8	32.2	B
	+	—	
10pr.	31.28	3.31	

2301—2360

	11m—12m	+16°	
m	′ ″	′	
9.5	43 41.4	38.5	
9.5	57.9	19.5	
9.4	44 2.1	13.5	
9.2	19.6	19.7	
9.4	25.8	8.1	
8.0	45 1.8	40.7	K
7.0	19.0	15.0	K
9.3	24.0	50.5	
9.0	25.5	33.0	
9.5	34.3	26.0	
8.8	56.9	47.2	K
8.7	46 27.3	43.4	Kb
9.4	31.3	40.4	
9.5	50.1	11.9	αB
9.5	57.9	47.1	
9.4	58.0	4.0	B
9.4	47 3.6	33.8	
9.4	45.3	29.3	
6.0	48 13.0	27.9	K
8.5	45.0	33.2	K
9.5	49 43.8	8.7	
9.3	51 25.2	37.7	αB
8.7	28.2	4.5	Kb
9.2	53 47.5	0.1	
8.6	52.1	40.1	K
9.2	54 40.3	9.8	
9.2	55 16.9	43.7	b
9.5	17.0	51.7	
9.5	19.6	12.3	αB
9.5	52.9	12.0	
9.4	56 33.5	17.6	
9.4	39.1	40.0	
9.5	57.6	9.8	
9.5	57 30.0	59.8	
9.5	58 1.2	9.5	
9.2	11.9	16.3	b
9.3	51.1	11.9	
9.5	55.8	1.7	
9.2	59 59.0	56.7	b
9.5	0 33.3	45.2	
9.5	37.8	41.0	
9.5	40.2	14.9	
8.6	1 54.5	13.3	L
9.5	2 55.5	28.5	
9.3	4 2.6	48.6	Bb
9.5	18.5	8.7	
9.4	5 6.9	52.5	
8.7	6 25.7	17.2	K
9.5	29.2	18.9	
9.5	38.1	21.4	
9.1	9 6.6	49.9	b
9.5	9.7	55.6	
9.3	26.4	37.3	
9.3	34.8	37.1	
9.5	10 39.4	14.9	
9.4	52.6	57.5	
9.5	11 30.5	52.8	
9.5	33.3	41.5	
9.5	52.0	39.0	
8.0	12 45.4	30.6	Lb
10pr.	+ 30.79	— 3.34	

2361—2420

	12m.	+16°	
m	′ ″	′	
9.1	12 49.0	43.3	
6.5	13 27.6	19.7	K
9.3	42.8	36.1	
9.1	58.1	37.7	Bb
9.2	15 18.6	27.1	
9.5	31.8	38.0	
9.5	16 20.0	41.0	
9.5	23.8	2.8	
8.6	33.8	26.0	L
8.3	18 7.2	59.5	K
7.3	43.3	40.8	K
9.4	47.3	9.2	B
9.5	50.2	56.9	
9.2	19 25.9	34.6	Kb
9.5	32.5	16.2	αB
9.5	20 40.3	37.2	
8.3	51.0	26.1	K
8.7	51.4	3.2	Kb
9.5	21 38.3	50.9	
9.5	54.1	27.4	
9.5	22 42.0	27.8	
9.5	23 37.3	15.6	
9.5	41.6	57.4	
9.3	48.5	52.6	
8.9	24 26.0	42.1	B
9.5	51.0	28.1	
9.4	25 9.1	7.1	
9.3	18.9	1.6	
9.5	26.8	24.3	R
8.0	27 26.8	37.4	K
9.2	28 3.5	36.3	
8.0	14.6	26.5	K
9.5	19.6	5.0	
9.0	29 25.8	3.6	
9.5	31.7	1.1	
9.5	30 26.9	22.0	
9.3	53.5	26.1	b
9.5	31 2.0	1.2	
9.3	50.4	13.4	
9.1	32 36.6	48.8	
9.2	33 3.4	17.0	
9.3	14.5	4.3	
9.4	21.6	0.6	
8.0	48.7	11.4	K
9.5	34 11.2	5.4	
9.5	19.4	58.9	
9.5	26.3	24.3	
9.5	35 5.7	3.2	
9.5	22.9	47.9	
9.2	36.0	54.0	
8.7	36 4.9	10.8	K
8.8	33.2	30.7	B
9.5	38 14.7	0.6	
9.5	22.7	19.2	R
9.0	42.0	34.8	
9.5	59.2	55.4	
9.5	39 9.7	6.6	
9.2	42.2	32.4	K
9.5	46.8	38.9	
7.3	55.4	23.8	K
10pr.	+ 30.24	— 3.31	

2421—2480

	12m—13m	+16°	
m	′ ″	′	
9.3	40 7.9	2.2	
9.2	16.5	28.4	B
9.5	51.7	6.2	
9.4	41 12.1	45.4	
9.5	19.0	59.4	
9.4	34.0	12.9	α
8.7	36.7	12.7	
9.5	42 52.3	8.5	
9.5	43 47.1	53.2	
6.5	45 14.8	55.4	K
9.5	41.1	49.7	
8.9	45.4	30.3	
9.5	46 12.4	47.7	
9.2	39.1	37.4	b
8.8	52.5	6.4	K
9.5	47 25.2	35.1	
9.0	48 48.4	36.3	K
9.2	49 5.1	22.2	
9.5	11.8	38.8	B
9.0	36.0	55.4	
9.5	50 49.1	41.1	
9.5	51 33.6	6.7	
9.5	53 0.0	46.3	
8.3	33.7	16.8	Kb
8.8	56.6	33.9	B
9.1	54 2.1	38.7	S
9.5	26.8	37.7	
9.1	55 16.8	19.6	
8.8	17.5	39.6	K
8.9	18.8	48.9	K
9.5	42.3	26.4	
9.5	56 7.4	19.8	
9.5	49.5	11.7	
9.0	52.0	54.0	K
9.5	57 5.5	2.1	
9.5	40.5	0.2	
9.5	42.1	58.2	
9.0	44.6	51.3	K
8.6	58 20.0	53.1	K
9.1	48.7	37.6	αB
9.0	59 25.2	9.6	K
9.5	54.4	43.2	
9.5	0 1.1	14.2	
9.5	9.7	34.5	αB
9.5	1 5.5	28.1	
7.8	15.5	16.8	K
9.5	2 14.3	44.3	
8.5	44.1	38.0	
7.9	51.5	54.8	K
8.7	3 1.8	7.5	Kb
9.5	50.6	23.8	
9.5	52.5	27.0	
9.5	4 17.0	14.2	
9.3	21.5	30.2	
9.3	27.2	30.7	
7.3	5 5.4	54.3	K
7.6	59.6	5.3	K
9.4	6 9.4	43.8	B
9.5	19.5	2.5	
9.5	28.0	16.2	
10pr.	+ 29.77	— 3.24	

2481—2540

	13m	+16°	
m	′ ″	′	
8.8	6 56.2	43.8	K
9.5	7 1.0	19.7	
8.4	28.4	2.9	K
9.3	39.1	18.5	
9.4	39.8	6.8	
7.5	8 11.5	57.0	Kb
9.5	52.4	57.2	
9.3	9 1.3	48.4	
9.0	55.5	3.9	
9.5	11 29.3	6.0	
9.5	59.1	9.8	
9.5	59.9	24.2	
7.0	13 4.1	20.3	K
9.0	14.9	12.9	L
9.5	23.2	42.9	
9.4	14 4.5	3.2	
9.0	33.5	27.2	
7.1	35.0	50.5	Kb
9.5	15 20.0	29.5	
9.1	44.4	38.7	b
7.6	53.5	1.1	K
8.8	16 28.7	12.2	L
9.5	17 18.3	26.5	
9.5	22.6	39.6	
9.1	31.0	47.8	K
9.1	18 3.9	3.4	
9.5	30.4	23.2	
6.5	34.7	19.7	K
9.5	19 38.2	49.6	
8.7	20 30.6	44.8	K
9.5	21 6.4	6.4	
9.2	19.7	31.6	Kb
8.0	22.7	27.7	K
8.3	23.9	52.9	K
9.5	54.5	56.5	
8.8	56.8	40.4	L
9.5	22 32.7	2.7	
9.1	34.2	7.0	
8.5	23 1.3	4.1	Lb
9.5	9.5	28.3	
9.5	10.4	22.5	
9.5	24 10.5	38.5	
9.5	25 36.0	6.2	αB
9.0	26 6.3	46.9	K
9.2	11.3	52.0	
9.4	11.6	16.1	
8.8	49.2	17.2	
9.2	27 4.3	0.7	αB
9.5	30.7	10.4	αB
9.5	47.5	56.6	
9.1	28 52.1	3.1	b
9.5	29 16.1	20.1	αB
9.3	30 7.8	34.5	R
9.5	40.8	56.9	
9.3	32 39.0	21.1	
9.3	33 15.5	49.0	
9.4	34.8	7.9	
9.3	35.6	34.9	
8.1	34 7.4	40.2	Kb
9.5	28.1	13.5	
10pr.	+ 29.35	— 3.14	

2541—2600

	13m	+16°	
m	′ ″	′	
9.2	35 52.8	13.7	
9.2	55.2	40.4	
9.5	36 19.5	30.4	
8.8	24.2	18.5	K
9.5	37 14.9	1.9	
9.5	53.4	24.1	
9.3	38 12.3	2.4	
8.7	13.1	48.9	K
9.3	25.8	7.7	
9.5	30.0	18.3	
8.3	38.4	42.3	K
9.0	47.6	24.1	
9.5	39 20.5	3.8	
9.5	24.0	36.7	
8.7	30.0	29.2	K
9.5	49.5	44.2	
9.4	40 46.6	57.0	
9.5	48.2	35.1	
9.5	52.2	3.1	
9.4	41 4.7	34.5	
9.3	12.9	15.6	
9.4	36.3	29.0	
9.3	42 12.4	11.9	
4.2	30.1	31.7	Kb
9.4	57.5	6.6	
9.5	43 14.0	53.7	
9.2	51.1	58.8	b
9.5	58.3	57.6	
9.3	44 11.6	16.5	
9.0	15.5	30.8	
9.3	45 10.3	56.1	
9.0	18.8	19.1	
9.5	30.9	19.6	
9.5	31.6	37.7	
9.4	46 3.7	3.5	
9.5	48.2	16.8	
7.8	47 43.9	0.2	K
9.5	58.0	37.3	
9.5	48 1.3	29.5	
8.8	54.9	33.2	
8.7	59.9	44.0	
9.3	49 19.2	3.4	
7.2	38.8	36.8	K
9.3	55.7	44.0	
8.9	50 12.6	12.8	K
8.5	25.4	26.7	K
9.3	43.9	25.1	
7.7	53.7	54.7	B
9.3	57.6	12.6	
9.5	51 17.7	43.8	
9.5	24.2	54.7	αB
9.3	39.2	6.7	
8.3	52 0.9	16.1	K
9.5	4.5	52.1	
9.5	14.7	51.6	
9.5	18.2	5.9	
9.3	32.5	33.2	
7.8	53 46.5	5.4	K
9.5	54 19.1	44.0	
8.8	34.4	44.6	
10pr.	+ 28.87	— 3.00	

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	13°—14°		+16°			14°		+16°			14°—15°		+16°			15°		+16°			15°—16°		+16°	
m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′		m	°	′ ″	′	
8.3	55	4.3	16.0	K	9.3	25	41.4	39.5		8.5	54	17.1	50.3	K	9.5	18	18.6	41.4		9.5	47	8.4	11.2	
9.3		17.4	58.1		9.3		46.4	37.0		8.5		41.8	27.5	K	9.3		23.8	35.4		9.0	48	27.1	58.3	
8.3		49.3	2.5	Kb	9.3	26	44.4	45.4		9.2	55	2.3	30.3		9.5		45.3	13.3		9.0		39.7	50.6	
9.3	56	27.9	24.6	α	9.0		56.4	27.8		8.5		4.8	20.9	K	9.0	19	24.0	45.8	K	8.9		44 5	29.2	
9.3		43.8	7.3		9.3	27	1.3	0.7		7.0		50.5	36.8	K	9.5		33.3	22.0		9.3		47.8	41.0	
9.3		50.0	22.3	B	8.9		9.1	16.0	K	9.2		50.5	20.9		9.5	21	0.8	4.1		9.5		57.8	14.7	
9.3	58	25.4	45.7	b	9.2		16.9	14.3	K	9.3	56	26.5	57.5	b	9.2		43.3	40.7		9.2	49	13.8	20.6	
9.5		31.4	27.3		9.5		27.9	40.2		8.0		48.6	0.3	K	8.8	22	2.8	24.0		9.5		39.1	49.9	
9.5	59	44.4	6.6		9.5	28	14.3	3.7		9.5	57	27.2	22.1		6.5		33.4	54.3	K	3.8		46.7	8.6	K
9.5	0	14.8	4.6		9.3		47.4	32.6		9.5		29.8	43.4		7.1	23	4.1	42.0	K	9.5	50	2.4	8.6	
8.9		56.8	3.9	Kb	9.0	29	29.9	28.8		9.4		36.6	11.2		9.0		33.9	12.9	K	8.5		57.1	30.2	K
8.6		57.9	45.0	K	9.5		36.9	34.4		9.5	58	28.1	9.5		9.5	24	1.6	0.3		9.3	51	53.8	12.0	
9.3	1	35.4	44.0		9.5	30	57.4	50.9		9.5	59	33.9	47.1	αBb	9.5		22.7	37.9		9.4		57.8	23.4	B
9.5		49.8	33.3		8.8	31	5.9	17.7		9.4		37.0	22.8	αB	9.4		39.3	34.4		9.5	52	0.0	17.0	
9.5	2	10.7	55.0		8.9		51.7	37.4		9.5	0	18.2	0.7		7.7	25	9.2	44.4	K	8.1		13.5	38.7	K
7.0		40.1	18.5	K	9.5		53.5	7.8		9.3		41.9	13.1	K	8.8		11.7	53.9		9.2		13.9	14.4	K
8.8	3	37.8	10.3	K	9.2	32	36.5	0.4	b	8.8		46.0	14.8	K	6.2		29.3	33.3	Kb	8.8		22.5	10.4	K
9.5	4	9.2	13.2		9.5	33	36.9	37.8		9.4		58.3	48.0	αB	8.1		44.3	7.2	B	9.2		41.5	47.7	
9.5		46.6	4.2		9.5	34	5.2	5.5		9.3	1	7.1	3.2	Kb	7.0	26	23.7	30.6	K	9.5		42.6	6.5	
9.2	5	41.4	11.5		9.5		45.0	9.8		9.0		58.2	32.4	K	9.5	27	56.6	51.5		9.5		43.3	19.1	
9.5		45.8	33.3		9.3		57.4	43.6		9.3	2	33.0	13.3		9.5	28	11.8	15.0		9.2		59.2	18.7	
8.5		47.9	20.5	K	9.3	35	18.9	5.0		9.5		52.7	55.0		9.5		55.8	17.2		9.5	53	5.4	58.3	
8.2	6	3.4	33.3	K	9.2		50.5	10.1		9.5	3	17.8	37.2		8.5	29	19.3	35.4	K	9.5		31.6	54.9	
9.4		10.6	23.9	αB	9.5	36	16.9	25.0		9.5		18.5	44.1		9.0		19.7	44.1		8.7		35.8	11.9	K
8.9		34.2	52.2	K	8.5		50.9	33.3	K	8.7		22.2	9.6	K	9.3		25.7	55.6		8.4		45.5	5.2	K
9.3	7	21.0	1.6		9.3	37	42.9	12.2		9.5	4	4.3	58.8	αB	8.8		27.3	19.9		9.5	54	50.3	8.0	
8.0		49.8	40.9	K	9.3	38	6.4	28.4		9.5		55.8	14.0		6.0		49.2	36.1	K	9.0	55	47.6	17.3	K
9.3		55.6	19.5		8.5		23.2	24.3	K	9.0	5	13.2	2.7	K	9.5	30	46.7	53.0		9.4		48.6	44.2	
8.7	9	14.7	14.0	K	8.7		30.4	57.7	K	9.4		14.9	38.8		9.5	31	4.7	44.8		9.3	56	39.8	4.9	
9.3		31.4	23.3		9.3	39	31.6	11.5		9.2	6	16.4	52.2	K	9.5		43.1	10.5		9.5	57	3.1	27.6	
9.3	10	44.7	37.0		9.1		31.7	50.3		9.5		31.8	0.2	K	9.3		46.1	57.8		9.5	58	6.3	1.1	
9.2		51.9	43.3	K	8.7		40.2	7.5	K	8.5		49.8	27.5		8.7		48.2	53.2	K	8.5		18.5	25.5	Kb
9.5	11	13.4	10.8		9.5	40	55.1	52.5	B	9.5	7	51.1	51.8		9.3	32	1.5	0.2		9.0		24.0	34.8	
9.3		18.4	44.3		8.7	41	1.3	48.9	Kb	9.0	8	18.2	15.4	Kb	6.5	33	1.5	47.5	K	9.3		32.0	59.0	
9.3		45.1	30.5		8.3		35.4	44.4	K	9.5		24.8	24.0		9.4	34	16.0	8.7	B	8.8		33.3	51.1	K
9.5	12	47.4	31.6		9.5	42	27.9	51.6		9.5		32.3	15.0		6.0		21.1	31.3	Kb	9.3		40.1	55.5	
5.3		54.0	58.2	Kb	9.3		51.4	10.8		8.7	9	12.5	15.4	L	9.4		22.7	2.6	B	9.4		43.1	12.5	B
9.5	14	54.4	53.0		9.5		56.9	25.0		8.0		23.5	4.6	K	9.3	35	10.7	48.3		9.4		47.5	21.1	B
9.2	15	32.9	35.7	b	9.5	43	29.6	59.9		9.1	10	14.8	38.6	b	9.0		23.7	55.0		9.4	59	0.5	22.6	B
9.0	16	22.4	11.5		9.2		39.4	29 8	K	9.5	11	23.4	21.3		9.4	36	55.1	8.0	B	9.5		10.3	2.1	
9.5		57.2	54.3		9.5	44	2.3	4.4		9.5		56.8	47.6		8.7	37	19.6	1.8	K	8.0	0	15.0	46.0	K
7.3	17	20.5	56.3	K	9.3		50.1	19.8		9.0	12	6.8	13.3		7.5		51.4	58.6	K	8.9		25.0	55.8	K
9.3		23.3	12.4		9.1	45	51.8	53.6	b	9.2		50.0	52.1	K	9.1	38	32.8	0.9		9.0		31.1	37.3	K
9.0		28.7	5.5		9.3		58.7	51.6		8.5		52.5	10.5	K	9.3		36.0	35.5	b	9.2		38.4	56.0	
9.5	18	11.4	23.6		6.2	46	36.0	17.4	B	8.3		55.2	29.5	K	9.4	39	19.0	49.9	B	7.5	1	8.6	6.7	L
9.3		52.4	13.6		9.4		56.1	9.6		9.5	13	5.7	53.8		9.4		30.7	49.2	B	9.5		41.0	43.2	
9.2	19	6.1	35.7	b	8.3	47	29.6	7.6	K	8.3		11.6	58.2	K	9.4		37.2	41.0	B	7.5	2	15.1	11.6	K
9.4		39.7	30.0	αB	9.5		38.5	41.3		9.5		21.3	46.1		9.3	40	38.7	33.7		9.2		18.5	58.8	
8.7	20	11.3	9.1	K	9.3		48.8	35.1		7.6		27.3	42.9	Kb	9.5	41	23.3	22.0		8.4	3	3.6	13.4	Bh
9.5		37.4	6.4		9.5		57.7	10.6		9.3		33.3	19.9		9.5	42	0.1	32.0	b	8.7		4.1	52.6	
9.3	21	9.1	54.0		9.5	48	22.2	1.4		9.5	14	21.6	14.7		9.5		16.1	9.2		9.5		7.3	55.7	
7.7		23.3	47.1	K	9.5		33.6	53.4		8.0	15	39.7	37.2	K	9.5		56.8	46.9		8.5		10.7	17.7	Lb
8.7		25.9	19.2	K	9.5	49	26.2	59.8		8.0	16	6.3	47.4	K	9.4	43	59.2	24.7		9.3		27.1	39.7	
8.7		39.2	23.6	K	9.2	50	2.7	54.6	K	9.3		9.8	34.7		9.4	44	7.5	39.6		9.3		38.0	55.2	
8.9	22	30.9	32.6		6.1		26.9	59.6	K	9.1	17	12.7	38.9	K	8.7		32.1	35.1	K	9.3		41.0	51.0	
9.3		39.0	46.6		9.1		29.2	4.9	b	9.5		19.2	55.2		9.5	45	28.2	30.0		8.8	4	20.6	39.3	K
8.8		47.0	48.9	K	9.5	51	31.0	27.5	B	9.5		24.3	16.8		8.8	46	14.3	22.3	K	8.0		32.3	41.8	K
9.5		47.8	7.3		9.5	52	15.3	11.6		9.5		50.3	9.2		9.3		18.5	13.8		9.5		46.7	1.3	
7.5	23	3.0	52.4	K	9.0	53	50.7	41.0	Kb	9.4		51.2	45.0	B	9.4		22.1	6.0		9.5	5	32.2	6.2	B
9.5	24	57.4	6.4		8.5	54	16.7	44.4	K	9.3	18	18.8	45.3	B	7.2		58.1	30.6	K	8.8		38.8	20.3	
10pr.		+ 28.59	— 2.82		10pr.		+ 28.17	— 2.56		10pr.		+ 27.84	— 2.30		10pr.		+ 27.55	— 2.01		10pr.		+ 27.31	— 1.70	

2641 a			
var	17	19	58.8

2736 a			
9.5	0	44.6	47.9

2901 — 2960

m	16ᵘ	+16°	
	′ ″	′	
8.6	5 39.1	53.9	K
9.5	45.2	6.4	B
8.1	58.9	55.1	K
9.0	6 16.6	41.4	K
9.5	27.4	4.0	
9.3	30.0	14.5	Kb
9.4	37.4	4.0	B
7.8	7 19.0	48.7	K
9.2	39.9	10.3	K
9.0	8 11.0	23.0	K
9.4	21.1	42.7	B
8.5	9 23.6	24.5	K
9.2	24.5	39.1	
9.2	29.1	48.7	
9.5	46.5	17.1	B
9.5	10 10.0	46.3	
9.5	13.6	48.0	
9.0	21.8	36.9	
8.5	45.3	47.7	K
9.2	52.4	3.9	
9.5	11 0.6	56.9	B
9.4	34.1	2.3	B
9.5	36.3	56.0	
8.1	12 10.9	58.8	Kb
9.5	37.5	25.6	
8.6	44.0	46.3	K
9.4	13 16.6	38.0	
9.3	28.5	48.0	
9.3	14 41.4	46.6	B
9.5	15 52.1	34.5	
9.5	16 14.6	19.0	
9.4	20.0	30.8	a
9.5	31.3	6.6	
9.1	39.1	26.9	K
9.2	44.1	22.9	K
9.0	47.5	42.1	
8.4	17 19.3	26.4	K
8.6	36.5	30.0	K
9.5	18 28.6	11.7	
8.5	39.1	31.4	K
9.5	19 7.7	55.8	
9.5	19.6	14.8	
7.0	20 6.5	17.6	K
9.4	12.2	7.4	B
7.7	16.3	30.0	K
9.4	17.6	46.3	
9.3	55.9	10.9	
9.4	21 20.5	31.1	
7.7	26.6	4.4	K
9.5	22 15.8	11.0	
9.3	29.6	51.8	
9.2	36.5	42.5	
9.0	44.3	0.5	
9.5	48.2	4.3	
9.5	52.9	8.6	
8.8	23 1.7	54.5	K
9.5	32.5	36.5	
9.5	45.3	19.9	
9.4	24 10.9	11.2	B
9.4	12.3	32.1	
10pr.	+ 27.16	— 1.46	

2961 — 3020

m	16ᵘ	+16°	
	′ ″	′	
7.6	24 51.5	44.9	K
8.8	52.4	42.8	K
9.5	25 2.0	6.3	
9.5	16.4	36.1	
9.4	27.5	59.4	
9.4	48.0	58.9	
9.5	50.1	32.3	
9.5	26 23.0	10.8	
9.3	29.4	51.1	Kb
9.4	27 29.8	53.3	
9.5	57.3	31.1	
9.5	28 1.5	30.1	
9.4	29.3	13.3	
9.5	41.8	13.5	
9.3	47.9	52.6	
9.5	55.7	13.5	
8.4	29 25.1	50.6	K
9.4	42.8	15.8	B
9.5	46.6	32.3	
9.5	51.0	50.5	
9.5	56.7	19.7	
9.4	30 16.7	35.3	
7.9	42.4	0.3	K
9.3	56.3	40.3	
8.8	31 10.0	55.6	L
9.5	42.5	59.3	
8.7	56.7	17.9	K
8.4	32 10.3	30.7	K
9.4	24.1	41.4	
9.5	33.0	0.9	
9.4	47.6	31.6	
9.4	54.6	21.4	B
9.4	33 33.2	16.6	
9.1	48.1	12.5	K
9.3	51.0	31.2	
9.3	58.6	9.3	
9.4	34 8.1	55.4	B
7.8	49.8	23.8	K
9.5	54.1	21.2	
8.0	35 6.9	13.7	K
9.5	37.5	30.5	
9.5	36 7.7	1.9	
9.5	10.0	4.7	B
9.2	18.0	24.0	
9.5	49.6	28.7	
9.5	50.4	24.3	
8.8	37 18.5	44.9	K
9.5	43.5	44.5	B
9.5	55.4	26 3	
9.3	58.0	50.9	
9.1	38 14.0	21.3	K
9.5	41.8	12.3	
6.1	48.8	1.1	K
8.9	58.3	32.9	K
9.0	58.9	51.8	
9.5	39 9.6	26.4	
9.5	30.1	10.6	
9.5	40 4.8	34.3	
9.5	5.1	57.9	
9.2	13.7	30.1	b
10pr.	+ 27.04	— 1.24	

3021 — 3080

m	16ᵘ	+16°	
	′ ″	′	
9.3	40 40.5	6.0	a
9.5	58.8	57.8	
9.5	41 4.4	32.5	
9.4	14.7	44.2	
9.5	17.6	17.1	
9.1	18.1	1.1	K
9.5	25.9	6.9	
9.5	39.3	31.0	
9.1	46.3	41.1	
9.5	49.5	48.6	
9.4	50.9	20.1	
9.3	42 11.4	43.3	
8.7	14.9	38.0	
9.2	43 3.3	7.1	
9.4	6.7	39.8	
9.4	8.0	50.9	
9.3	9.4	34.5	
9.5	29.9	16.7	B
7.7	35.8	45.6	K
9.2	38.1	13.0	
9.4	39.9	16.0	B
9.4	42.2	57.3	B
9.5	47.5	58.1	L
8.9	44 8.6	58.5	
9.5	17.5	53.4	
9.2	17.7	10.2	
9.4	20.0	54.3	
9.1	21.4	31.3	b
9.4	23.8	54.3	
9.2	32.1	52.0	
7.5	39.0	3.2	K
9.3	44.2	49.6	
9.3	46.3	5.3	
9.5	56.2	2.5	
9.3	45 3.9	40.9	
9.5	55.3	34.1	
9.3	56.4	9.8	
9.3	46 14.5	49.7	
8.8	35.2	3.3	R
9.1	47 2.4	20.3	b
9.5	32.0	56.0	
9.4	48 5.7	46.5	
9.5	14.6	2.2	
8.4	17.2	39.1	
8.3	19.9	33.8	K
9.1	49 0.4	52.8	b
8.7	29.8	37.0	K
9.3	32.0	8.3	
7.2	51.4	31.7	K
9.2	50 16.6	12.2	
9.4	19.3	26.7	
9.5	23.3	34.5	
9.4	23.9	43.8	
9.5	58.4	19.2	
9.3	51 33.2	35.9	B
9.5	59.5	46.1	
9.4	52 27.0	51.3	
9.2	33.2	24.7	b
9.2	45.6	49.3	
9.4	53 16.6	39.6	
10pr.	+ 26.98	— 1.08	

3081 — 3140

m	16ᵘ—17ᵘ	+16°	
	′ ″	′	
9.5	53 29.6	11.5	
9.4	42.7	7.0	
7.2	54 32.5	49.3	Kb
9.3	55 4.5	54.5	
9.5	25.9	54.7	
9.5	45.5	34.2	
9.4	50.8	35.0	B
9.1	58.2	10.0	b
9.4	57 13.7	33.6	
9.5	17.2	40.2	
7.8	23.3	13.7	K
9.2	58 30.4	16.4	
9.5	59 39.8	17.2	
7.8	41.3	28.7	K
9.3	48.1	5.9	
9.5	0 7.9	57.3	
9.5	38.3	13.0	
9.5	39.2	5.2	
9.5	1 22.9	56.6	
9.5	36.2	46.7	
9.5	36.8	36.6	
6.5	44.7	17.3	K
9.5	2 14.5	27.2	
9.1	17.9	19.4	
8.0	35.9	39.2	K
9.5	40.6	31.2	
9.3	44.0	19.2	
9.5	58.6	11.0	
9.5	3 4.8	16.2	
9.5	28.5	22.8	
9.4	55.5	27.0	
9.5	57.6	58.9	
9.3	4 0.4	16.7	
9.3	4.9	54.7	
9.4	13.8	44.1	
9.4	32.1	31.7	
9.5	36.3	14.8	
9.4	54.4	32.8	B
9.5	5 0.1	44.0	
8.1	3.2	35.4	K
9.5	35.0	37.6	
9.4	38.7	20.4	
8.6	59.4	40.8	K
8.8	6 11.7	24.3	K
9.5	39.7	35.4	
9.5	49.5	54.4	
9.3	58.9	4.3	
8.5	7 23.0	6.9	K
9.3	25.1	14.7	
8.3	28.9	31.8	L
9.5	32.8	26.9	
9.0	34.8	22.8	
9.5	8 22.7	18.5	
9.5	52.7	43.1	B
9.5	53.6	52.1	
9.4	56.2	28.2	B
9.4	9 6.4	9.5	
8.5	40.1	33.6	
7.6	52.2	49.7	R
9.5	53.2	36.1	
10pr.	+ 26.89	— 0.81	

3141 — 3200

m	17ᵘ	+16°	
	′ ″	′	
8.4	10 49.9	58.3	B
9.5	11 19.9	23.7	
9.0	28.0	17.1	K
9.5	28.5	10.2	
9.4	41.6	7.7	
8.2	12 9.6	26.5	K
9.5	10.2	54.2	
9.5	31.1	59.8	
9.2	46.8	32.9	Kb
8.1	51.9	16.1	K
7.4	13 29.2	2.3	K
9.0	45.2	24.9	
8.0	54.3	14.9	K
9.5	57.6	47.0	
8.0	58.4	9.0	K
9.5	14 2.4	44.4	
9.5	11.3	10.3	
9.3	11.7	11.9	
9.5	39.8	31.8	
9.5	47.2	3.0	
8.8	15 1.2	5.2	K
9.4	1.5	22.4	B
6.5	5.8	53.3	K
9.4	7.5	23.6	B
9.4	58.8	37.0	B
9.0	16 5.6	26.0	
8.6	23.8	36.2	S
9.5	33.6	39.2	
9.5	37.4	6.4	
9.5	54.9	32.5	B
9.5	17 11.5	31.0	B
9.2	14.6	23.0	
9.2	33.9	2.2	
5.5	18 1.1	27.5	K
9.4	22.2	6.6	
9.1	41.3	40.2	
9.2	42.1	22.7	R
9.3	46.6	39.4	
9.3	47.4	20.6	
9.3	57.6	14.7	B
9.5	19 3.9	17.5	
9.4	5.9	55.9	
6.5	11.1	31.6	K
9.3	20 12.2	52.2	Kb
9.5	17.0	11.2	
9.4	42.4	10.3	B
9.5	48.1	33.3	
7.0	21 4.1	35.0	K
8.8	21.2	5.2	K
9.4	25.2	5.2	
9.3	37.8	17.8	B
9.4	38.2	24.8	
9.5	43.6	5.8	
9.5	58.5	12.5	B
9.4	22 0.6	13.0	B
9.4	53.6	53.3	
7.7	23 21.1	5.7	K
9.5	35.2	50.4	
9.1	44.6	48.7	K
9.3	52.1	25.0	
10pr.	+ 26.83	— 0.62	

3201 – 3260

m	17ʰ	+16°	
8.9	23′ 55.3″	8.2	K
9.4	24 8.8	30.5	B
9.5	11.5	34.7	B
9.5	32.1	2.0	
9.5	38.6	56.6	
9.5	47.4	52.2	
8.4	25 17.6	17.2	K
9.4	20.4	7.2	
6.8	27.4	57.0	K
9.2	33.6	18.8	
9.0	34.1	26.0	
9.5	58.6	10.3	
8.0	26 23.1	39.1	K
7.0	42.1	53.1	Kb
9.4	43.9	1.1	
9.5	55.1	39.1	
9.5	27 2.1	39.1	
5.0	10.1	26.7	K
9.5	34.6	57.8	B
6.8	59.1	37.0	K
9.4	28 28.0	41.9	
9.1	35.6	28.4	
9.5	29 2.1	27.4	
9.5	18.6	40.9	
9.5	29.6	5.5	
9.5	30.6	28.6	
7.5	30 8.3	29.9	K
9.2	12.1	0.6	
9.2	16.2	50.1	b
9.5	27.6	36.0	
9.1	28.9	15.1	K
9.5	56.1	28.2	
9.3	31 12.6	41.4	
9.5	14.1	50.6	
9.5	41.2	7.1	
9.5	32 11.6	10.0	
9.0	11.6	39.5	K
9.1	17.6	25.0	K
9.5	33.5	14.7	
9.5	39.1	50.1	
9.5	39.6	52.3	
9.5	44.2	8.2	
8.6	33 6.8	35.0	L
9.3	14.1	38.8	
9.2	31.8	59.8	b
9.4	55.3	45.6	
9.5	34 10.4	56.6	
9.5	21.7	42.8	
9.4	29.4	47.7	
9.5	34.9	54.2	
8.0	38.6	33.3	K
9.3	44.6	9.0	
8.5	53.1	20.6	K
9.4	55.8	55.0	
9.5	35 22.0	54.3	
5.1	28.7	3.3	K
9.3	40.4	51.0	B
9.2	50.3	33.8	
9.5	50.4	53 5	
9.5	36 6.6	6.0	
	+	—	
10pr.	26.79	0.43	

3261—3320

m	17ʰ	+16°	
8.1	36′ 6.9″	57.2	K
9.5	7.7	8.9	
8.9	21.1	49.4	K
9.4	37 30.3	23.4	
9.1	44.8	39.9	B
8.9	51.1	4.1	K
9.3	52.5	38.8	
9.5	38 8.3	35.0	B
9.4	23.9	53.5	
9.5	24.1	10.2	
8.5	28.5	45.2	K
9.5	51.6	28.0	
8.1	39 17.1	53.5	K
9.4	42.5	29.8	
9.5	40 2.7	28.3	B
9.5	13.6	15.3	
9.1	51.5	13.3	
9.5	52.3	0.2	
9.5	41 16.8	22.2	
9.2	42.5	33.9	
9.5	43.1	2.0	
9.1	42 0.3	11.4	B
9.2	13.8	6.9	
9.1	18.5	44.9	K
8.6	19.3	40.6	Kb
9.3	40.6	57.4	
9.1	53.4	53.8	
9.5	43 10.1	27.4	
9.1	38.3	44.3	b
9.3	44 12.0	36.7	
9.5	13.8	47.3	
9.5	15.1	21.2	
9.5	49.0	19.8	
9.5	52.1	49.3	
7.5	45 35.5	41.0	K
8.9	53.2	55.9	B
9.3	57.9	41.4	B
9.4	58.0	47.2	B
9.4	46 1.5	40.1	B
6.7	5.1	56.5	L
9.5	17.0	40.1	B
9.2	26.7	42.1	B
9.3	30.2	53.7	
8.5	34.9	14.0	K
9.5	58.8	9.3	
9.5	47 3.6	17.8	
9.5	8.5	49.7	
9.0	15.6	48.3	K
9.5	17.6	4.1	
9.3	41.0	9.1	
8.7	42.3	57.9	K
8.2	48 5.5	20.5	L
8.7	16.6	34.8	K
8.6	44.5	40.6	K
9.1	58.2	53.3	
9.5	49 44.0	41.1	
9 2	44.5	30.8	
9.0	50 24.0	12.5	
9.0	24.4	6.4	Kb
9.4	44.5	8.5	
	+	—	
10pr.	26.77	0.23	

3321—3380

m	17ʰ—18ʰ	+16°	
9.5	50′ 45.1″	26.3	
9.5	50.5	8.5	
9.4	53.5	5.5	
9.5	51 2.0	6.3	
9.2	10.6	54.5	
9.4	22.8	38.4	B
9.5	36.2	39.2	
9.5	47.9	57.1	
9.2	52 4.8	53.7	B
9.2	21.1	21.6	b
9.3	24.5	36.3	
9.4	25.0	51.6	
8.6	53 1.5	39.4	K
9.2	10.6	14.0	
4.9	36.2	46.7	Kb
9.5	49.5	39.7	
9.5	54.1	34.2	
9.0	54 45.8	10.5	
8.8	49.1	50.1	K
8.0	55 13.1	44.6	K
8.8	23.0	9.5	
9.5	37.8	20.8	
9.5	43.9	28.7	
9.3	56 0.1	57.2	B
8.3	7.5	7.9	K
8.7	10.3	23.2	K
7.5	16.1	49.4	K
9.0	18.4	31.6	B
8.0	28.6	5.4	K
9.2	57 2.1	51.9	
9.5	24.6	47.6	
9.5	25.9	38.6	
9.4	51.4	18.5	
9.5	58 0.8	51.3	
9.4	20.7	59.3	
7.0	33.8	55.4	K
9.2	52.8	2.9	
8.7	56.9	22.8	K
9.1	59.8	44.9	
8.7	59 2.2	31.4	B
9.0	3.9	27.5	
9.5	5.9	25.2	
9.3	6.0	36.4	B
9.0	7.6	40.0	
8.8	10.4	31.7	B
9.5	33.3	57.1	
8.9	36.0	9.5	
9.4	54.0	3.4	
9.1	55.3	0.9	
9.5	0 6.4	30.6	
9.5	19.5	37.1	
9.3	25.3	42.4	
9.5	25.2	14.2	
9.3	41.0	52.5	K
9.3	50.1	53.2	
9.5	58.3	5.4	
9.5	1 40.6	57.1	
9.5	42.3	29.1	
9.2	50.3	8.3	
8.9	2 9.5	58.6	K
	+	—	
10pr.	26.76	0.04	

3381—3440

m	18ʰ	+16°	
9.0	2′ 17.0″	48.1	K
9.5	32.0	40.4	
9.5	39.6	2.5	
9.5	42.4	58.6	
9.5	51.8	46.9	
9.5	3 7.0	12.8	
9.1	8.1	40.1	
9.5	34.0	9.8	
9.5	35.3	40.6	
6.0	40.0	27.0	L
8.9	45.1	18.4	
9.1	45.5	10.3	
7.8	4 13.2	1.8	K
9.2	59.9	40.9	b
8.8	5 2.4	3.6	
9.5	16.3	15.0	
9.5	22.2	16.9	
9.5	32.0	19.6	
9.5	39.4	7.9	
9.1	40.8	39.8	
9.5	42.9	37.6	
9.5	6 0.6	3.7	
8.6	12.9	5.3	K
9.4	37.8	0.2	
6.5	47.1	14.3	L
9.3	48.9	50.7	
9.4	56.2	38.7	
9.4	7 3.1	26.0	
9.4	5.5	4.8	
8.9	8.6	54.5	K
9.5	23.0	10.9	
9.4	23.8	0.8	
7.9	27.0	22.7	L
9.1	30.5	29.7	
9.4	31.8	0.2	
9.5	31.9	25.0	
9.5	48 0	9.6	
9.5	48.7	47.6	
9.3	59.6	29.3	
9.5	8 5.5	35.7	
9.5	7.8	2.4	
9.5	14.4	8.3	
8.8	25.0	48.2	
9.4	31.3	44.4	
9.1	35.6	23.8	
8.3	36.0	13.0	K
9.1	40.6	44.1	
9.4	44.0	20.1	
9.5	49.0	7.8	
9.3	9 5.3	22.7	
9.5	12.8	0.7	
9.5	15.7	2.7	
9.1	16.1	28.4	
9.1	29.6	12.1	
8.3	39.7	38.2	K
8.5	44.7	32.6	K
9.5	49.4	8.1	
9.5	54.0	20.3	
9.5	55.1	11.6	
9.4	55.4	23.0	
	+	+	
10pr.	26.76	0.11	

3441—3500

m	18ʰ	+16°	
9.5	10′ 15.9″	25.7	
9.5	48.8	47.2	
9.5	59.8	45.4	
9.4	11 4.3	30.3	
8.8	10.1	5.7	
8.6	25.3	18.4	K
9.3	30.1	15.8	
9.5	47.0	5.8	
9.5	59.6	52.1	
7.6	12 9.9	57.0	B
9.5	9.9	31.0	
9.5	34.8	54 2	
9.1	59.3	9.5	
9.5	59.5	15.6	
9.4	13 1.4	39.4	
9.5	7.9	53.7	
8.5	10.3	35.5	
9.5	15.2	1.2	
9.1	24.8	57.7	
9.4	33.3	49.4	
8.5	40.2	39.4	B
9.0	47.9	15.3	
9.5	54.3	45.5	
8.9	56.8	57.6	K
9.4	14 11.5	11.7	
8.5	11.6	25.1	
9.5	14.7	30.6	
8.9	19.3	53.8	K
9.3	31.3	47.2	
9.4	56.4	22.5	
9.4	15 1.6	8.8	
7.6	19.0	4.5	K
9.5	21.7	2.6	
9.3	31.3	16.4	
9.0	59.1	42.1	
9.3	16 1.2	5.4	
8.3	11.9	18.2	Kb
6.5	35.4	37.1	K
9.1	17 0.8	6.0	
9.5	8.9	43.1	
9.0	19.6	49.7	
9.5	23.7	45.3	
9.3	26.9	25.9	
9.5	32.6	41.2	
8.5	54.0	10.3	
9.4	55.2	48.5	
9.5	57.3	52.2	
8.9	18 2.5	33.9	K
9.1	17.8	43.0	K
9.1	19.6	45.6	a
9.4	24.0	47.1	
8.7	25.1	0.3	
9.3	28.3	14.6	
9.3	28.7	27.2	
8.0	31.6	37.0	K
9.5	39.3	42.7	
9.5	43.4	10.1	
9.4	44.8	42.7	
9.5	58.6	37.8	
9.5	19 3.0	44.3	
	+	+	
10pr.	26.76	0.22	

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	18ˢ		+16°			18ˢ		+16°			18ˢ		+16°			18ˢ—19ˢ		+16°			19ˢ		+16°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	19	11.6	20.8	K	9.5	29	37.0	1.4		9.3	42	14.0	58.0		9.3	51	41.2	0.7		8.4	0	39.9	51.2	K
9.4		16.0	37.9		9.4		42.4	48.6		8.2		24.7	5.7	B	9.5		41.4	5.5		8.9		46.3	49.7	K
8.9		34.2	2.7	K	6.1	30	38.9	4.8	K	9.4		29.6	7.2		9.5		41.4	8.5		9.3		48.4	53.8	
8.1		35.4	46.4	B	9.5		49.1	24.3		9.2		39.0	18.3		9.2		45.0	52.5		9.4		55.0	51.7	*a*
9.4		45.3	32.5		9.5		56.4	50.9		8.5		40.6	9.5		9.3		48 9	0.2		9.5		55.0	33.9	
9.5		51.4	15.0		9.1	31	8.0	49.3		9.4		42.4	13.9		9.3		58.7	15.7		9.3		55.4	17.2	
9.4	20	17.6	54.9		8.5		18.5	13.1		9.0		50.4	5.6		9.5	52	16.4	56.5		7.7	1	5.9	4.2	K
9.5		21.0	49.4		9.1		24.3	16.9		9.0		54.2	43.2		9.4		27.5	39.4		9.5		9.8	10.9	
8.8		41.7	33.4		7.8		40.8	22.9	K	9.5		58.7	49.0		9.5		48.4	47.0		9.5		11.5	34.6	
9.5		54.2	7.7		8.8		47.8	41.7	K	9.5	43	7.7	19.2		8.3		58.3	53.9		7.9		18.7	0.8	K
9.3		58.7	15.2		9.2	32	2.5	46.6		9.5		10.9	6.1		6.6	53	12.4	3.9	R	9.5		19.0	38.5	
9.5	21	3.0	28.6		7.5		8.8	25.4	K	9.5		23.0	29.3		8.9		13.1	42.1		5.5		27.3	38.6	L
9.3		36.5	21.2		9.5		10.1	37.1		9.5		25.2	25.2		8.6		45.5	48.7	K	9.3		44.7	45.7	
9.0	22	11.4	0.6		9.5		55.4	17.1		9.5	44	5.0	17.7		9.4		49.4	15.9		9.5		51.3	13.0	
9.0		11.5	8.5		9.2	33	2.3	47.6		9.5		22.5	22.5		9.5		49.7	19.7		9.2		51.9	45.9	
8.0		15.2	41.0	L	9.4		16.4	52.8		9.5		46.7	28.7		9.5		59.6	47.7		9.5	2	1.0	23.2	
8.7		31.3	19.7		9.5		21.9	45.5		9.2		47.6	14.3		9.3	54	10.2	11.2		9.3		2.4	56.3	
9.5		37.5	21.1		9.5		23.8	29.6		9.0		53.3	48.9		9.1		11.5	21.3		6.5		11.1	37.9	K
9.5		43.8	14.9		8.8		37.4	22.0	K	9.2		59.2	42.0		9.2		21.9	13.0	*a*	9.4		36.2	7.1	
9.4	23	13.6	0.9		8.0		40.2	25.6	K	8.7	45	7.5	24.9	K	9.5		26.4	45.9		9.5		48.8	32.6	
8.8		22.0	52.5		9.5	34	44.4	13.4		9.5		12.4	25.3		9.5		40.7	33.7		8.7		49.9	51.2	R
9.3		30.1	24.0		9.5		48.6	59.0		9.5		16.3	5.4		9.5		48.5	28.8		9.2	3	32.8	19.8	
8.7		44.8	32.6	K	9.3		49.9	5.1		8.6		19.0	47.3		9.1		57.8	44.7	*b*	9.5		37.3	8.6	
8.5		46.9	44.1		9.4		51.1	19.9		8.8		29.3	54.9		8.8		59.0	11.5		8.8		39.7	48.2	K
9.5		48.3	47.6		9.5	35	24.1	22.3		8.8		41.6	20.9		9.3	55	14.9	5.5		8.5		47.3	41.0	R
9.5	24	19.4	16.6		9.3		44.8	24.1		9.4		48.9	4.4		9.4		31.7	41.8		8.8	4	0.4	3.3	
9.5		26.8	34.5		9.5		46.1	36.6		9.5		55.4	44.7		9.5		36.8	32.4		9.5		14.2	25.3	
9.5		35.6	59.7		9.5		47.7	53.2		9.5	46	26.1	9.0		9.5		56.0	48.9		9.0		26.1	50.8	K
5.6		37.5	49.9	K	9.5		54.4	19.7		9.5		28.5	26.2		9.5	56	2.8	16.1		9.5	5	9.0	3.6	
9.5		47.1	58.3		9.3		57.1	27.4		9.5		41.2	37.4		9.5		21.1	53.4		9.4		38.1	32.3	
9.5		54.6	23.0		9.5	36	4.0	7.6		8.7		50.0	43.1	K	9.5		35.0	6.1		9.3		42.6	15.1	*a*
9.5	25	19.4	25.5		9.5		31.5	39.0		9.4		58.2	9.1		7.2		59.2	51.8	K	9.2		46.5	50.1	
9.5		29.1	11.5		7.5		36.4	29.9	K	9.1	47	0.4	28.6		8.0	57	13.4	45.4	K	9.5		48.9	13.5	*a*
9.4		45.6	18.7	K*b*	7.8		52.2	3.2	K	9.5		7.1	1.0		8.5		22.9	47.8	K*b*	8.0		57.1	36.8	K
9.5		46.0	46.2		9.5		59.2	4.6		9.4		9.2	39.8		7.2		31.2	15.2	K	7.0	6	4.4	35.5	K
9.2	26	16.0	3.6		9.3	37	16.3	45.1		9.5		11.5	40.2		9.0		48.7	26.1		8.5		4.4	56.4	K
9.5		16.6	39.0		9.5		33.0	2.4		9.5		12.6	1.5		9.0	58	2.3	35.3	K	8.4		4.6	4.3	
9.3		25.5	56.7		9.2		51.8	18.6	*b*	9.3		18.5	26.6		9.5		6.8	53.3		8.9		20.9	24.8	
9.5		27.0	9.5		8.7	38	16.3	45.0		9.4		23.7	50.1		8.9		9.9	39.0		9.3		28.5	53.4	
9.0		42.8	43.9		9.5		40.2	48.7		9.1		26.8	26.7		8.7		16.2	12.6	R	9.1		31.5	15.2	*ab*
9.5		45.1	53.4		9.5		48.5	46.2		9.5		54.8	39.8		9.5		22.1	21.2		9.1		39.6	23.3	
9.2	27	2.9	25.4		9.5	39	6.7	43.7		9.3	48	7.7	40.0		8.8		27.3	49.3	K	9.3		43.0	44.9	
8.5		3.6	44.8	K	9.0		10.6	50.8	K	9.5		16.8	11.9		9.4		31.3	18.1		9.2		53.9	38.6	
8.9		18.0	13.9		9.5		19.2	8.0		9.1		18.3	31.4	*a*	8.7	59	2.2	43.0	R	9.5	7	12.2	57.7	
9.3		19.9	40.5		9.5		42.3	48.5		9.3		33.7	6.2		9.5		9.8	33.8		9.5		13.8	18.4	*a*
9.5		26.8	17.0		9.5		50.8	53.4		8.8		35.0	33.4		9.5		17.0	52.3		9.5		19.8	33.8	
9.3		31.5	35.7		9.5		52.0	11.5		9.1		36.3	33.4	*a*	9.5		19.3	57.6		9.3		30.1	35.1	
9.5		44.0	46.4		9.5		55.3	28.5		9.3		40.5	46.8		9.5		38.5	25.3		9.4		49.4	25.3	
9.3	28	2.5	25.4		8.3	40	5.4	49.8	K	9.4	49	2.9	2.1		9.2		52.1	9.3	R	9.5	8	2.6	22.5	
9.0		3.9	33.9		9.5		30.8	52.6		9.5		8.8	48.1		9.5		54.1	2.4		9.2		17.5	2.0	
8.8		18.4	50.3		7.8		37.0	22.3	K	9.3		34.5	10.9		8.8		58.2	40.2		9.5		19.0	30.9	
9.5		22.3	55.1		9.2		45.7	29.7		8.9		35.6	35.0		9.4	0	0.7	32.4		8.3		21 7	10.2	K
9.5		24.2	6.8		7.0		52.2	45.3	K	9.5		46.7	54.0		9.5		0.8	13.0		9.0		38.4	43.2	
9.5		26.9	3.5		8.5		52.7	46.0	K	9.5	50	12.8	26.3		9.5		1.5	7.8		8.8		58.1	58.6	R
8.5		36.8	33.6	R	9.0	41	15.0	33.3		9.5		29.3	7.6		9.5		5.1	11.3		9.5	9	13.0	43.1	
9.5		40.4	49.5		8.6		28.1	6.5	K	9.4		33.2	46.1		9 3		14.5	52.5		9.1		15.2	8.2	*a*
9.5		46.1	55.5		9.5		36.1	3.3		8.3		36.6	32.7	K	9.5		19.7	7.9		9.5		50.4	36.8	
8.5	29	13.8	50.0	K	9.0		39.5	59.5		9.4		48.1	30.7		9.5		21.7	43.3		8.9	10	7.8	25.2	
9.4		14.2	4.3		9.5		58.7	39.1		9.5	51	6.9	8.6		9 5		25.1	46.5		9.4		19.4	57.7	
6.3		26.0	52.2	K	9.5	42	2.5	4.6		9.4		7.4	28.1		9.3		33.7	31.6		9.4		20.5	59.9	R
		+	+				+	+				+	+				+	+				+	+	
10pr.		26.78	0.36		10pr.		26.81	0.52		10pr.		26.85	0.67		10pr.		26.89	0.82		10pr.		26.93	0.95	

3713 *a*
9.5 | 57 18.9 | 48.9 |

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	19ᵐ		+16°			19ᵐ		+16°			19ᵐ		+16°			19ᵐ		+16°			19ᵐ		+16°	
m		′	″	′		m		′	″	′	m		′	″	′	m		′	″	′	m		′	″	′	
9.4	10	26.3	0.2	α		9.3	21	20.5	10.7			9.3	31	6.9	28.3			9.3	36	53.9	36.5	B		9.5	45	53.6	49.2	
9.4		27.2	17.5		K	8.3		26.3	24.2	K		9.5		10.7	53.5			9.3	37	3.6	16.7			7.8		54.5	16.1	B
9.3		29.1	30.7	α		9.4		28.4	33.4			9.5		26.2	46.0			9.3		58.9	10.0			9.5	46	9.5	34.5	
9.5		42.8	8.7			9.5		31.2	11.4			8.9		38.0	29.0			9.2	38	11.1	25.1			9.2		10.2	57.8	
9.0		45.8	0.9			9.5	22	15.4	50 3			6.9		38.7	55.5	K		9.5		12.2	36.6			9.2		10.3	15.0	
8.9	11	10.8	21.9	R		9.0		19.3	48.4			9.1		39.0	52.9			8.2		14.2	28.1	K		9.3		11.0	57.1	
9.1		52.9	8.1			9.5		28.3	18.2			9.5		46.7	38.1			9.5		31.0	43.8			9.5		22.5	21.1	
9.3	12	0.2	31.4			8.8		29.9	10.2	R		7.5		56.9	56.2	K		9.5		46.6	8.9			9.5		23.6	26.3	
7.2		1.2	26.4	K		9.3		34.6	28.2			8.5	32	1.5	47.6	K		9.4	39	5.7	11.5			8.6		34.9	55.8	
9.2		1.7	28.7	R		8.3		55.8	56.1	L		9.2		4.4	9 2			9.3		7.8	30.9			9.5		39.0	14.0	
9.1		4.9	14.3			8.5		58.0	43.8	R		9.5		20.6	42.5			9.1		23.5	52.7	K		9.2		47.9	39.0	
6.6		13.4	13.8	K		9.5	23	19.4	8.1			9.5		25.6	41.3			9.5		40.9	11.4			9.5	47	10.1	48.7	
9.0		29.0	0.7	K		6.7		50.6	25.0	K		9.5		26.6	23.5			9.5		41.8	19.8			7.3		11.9	24.4	K
9.5		46.5	53.2			7.0		59.2	30.4	K		9.5		43.8	44.5			9.3		43.3	26.4			9.4		20.4	51.0	
9.5	13	10.7	36.8			9.4	24	8.0	2.2			8.9		50.7	14.8	K		9.3		49.9	7.1			9.2		41.7	50.0	
9.5		14.6	13.6			9.5		11.5	38.0			6.9		52.1	14.7	K		8.8	40	8.3	3.8	K		9.0		44.0	18.1	
9.5		24.2	35.4			9.5		16.2	12.9			9.1		55.3	7.9			9.5		9.9	16.3			9.1		50.6	49.5	B
9.5		34.8	51.4			9.3		16.8	7.1			9.4		59.5	21.8	α		9.5		30.0	11.8			9.5		52.7	21.7	
8.5		57.8	34.2	K		8.5		17.7	57.5	K		9.4		59.5	16.6			9.0		39.8	56.7	K		8.3	48	12.5	58.1	K
9.5	14	8.5	25.6			9.5		28.2	24.3			8.8	33	9.3	26.9	R		8.9		40.5	21.2	K		8.4		13.7	45.3	K
9.4		13.6	0.8			9.2		33.0	8.0			9.2		11.9	26.8	αB		9.5		46.8	58.9			8.9		20.1	52.4	K
9.3		40.0	13.6			9.5	25	0.9	28.3			9.2		21.1	1.1	R		9.1		53.7	9.7			9.5		21.3	50.6	
9.3		41.4	38.7			8.5		30.5	10.4			9.0		23.8	33.5			9.5		59.0	13.4			9.3		29.0	15.7	
9.5		56.3	52.3			8.9		45.2	8.1			9.5		29.4	39.3			9.3	41	7.8	41.0	B		9.4		37.3	56.6	
9.0	15	8.1	47.5			9.2		56.1	39.7	b		9.2		33.3	0.0	R		9.0		15.2	37.5			9.5		46.2	52.7	
9.1		33.7	16.1			9.5		56.6	20.2			9.4		41.4	18.6			8.3		25.3	54.3	K		9.5		52.2	3.6	
9.5		35.0	33.1			9.3	26	12.2	6.5			7.3		48.8	0.0	K		9.1		40.0	2.5	b		var	49	25.3	15.4	K
9.2		40.9	48.3			9.5		27.4	30.2			9.3		57.0	34.4			9.5	42	2.5	6.5			9.3		34.2	20.1	
8.4		41.7	23.6	K		9.5		39.9	28.9			9.5		57.6	31.1			8.5		6.6	12.1	K		9.4		36.9	59.2	B
9.5		50.0	26.4			9.5		51.7	21.3	R		9.5		59.1	26.2			8.3		8.6	12.8	K		9.3		37.0	8.0	
8.5		54.2	4.1	Kb		9.4	27	6.8	2.9			9.5	34	0.3	8.9			9.1		12.5	59.6			9.5		57.1	24.3	
9.4		59.1	32.8			9.0		10.6	19.4	R		9.5		2.4	45.7			8.9		17.4	38.6			9.4	50	8.5	51.4	
9.5	16	56.6	47.2			8.9		17.4	33.1	K		9.5		6.9	50.3			7.7		23.7	16.5	K		8.4		11.3	1.4	K
9.5		57.2	0.3			8.0		26.1	28.4	K		9.5		14.2	16.4			8.9		29.5	23.6			9.5		27.5	5.7	
9.1	17	5.5	54.5			9.5		36.1	6.0			9.5		14.9	22.8			9.3		35.2	35.2			9.0		36.4	55.6	K
9.3		20.0	31.5			9.5		39.2	21.8			8.9		16.1	9.1	K		9.5		48.5	2.0			9.3		39.7	22.4	
9.3		20.1	11.2			9.4		43.6	44.6			9.5		20.0	21.5			9.5		59.7	31.2			9.5		53.9	3.0	
9.5		34.9	50.1			9.0		48.2	35.0			9.3		39.6	57.6			8.6	43	4.0	23.3			9.3	51	3.0	34.8	
5.8		52.1	39.9	Lb		9.3		48.6	25.6			9.5		48.7	12.8			8.5		5.0	45.1			9.0		8.8	59.4	
9.0		56.7	22.4			8.6		55.9	35.0	K		8.8		52.6	49.8			8.5		7.7	47.8	K		8.2		9.9	45.6	K
9.3	18	14.1	10.9			9.5	28	5.7	33.6			8.8	35	3.8	5.7	K		7.9		9.6	1.4	K		5.8		10.8	24.7	Lb
6.7		14.7	40.6	K		7.3		12.8	20.2	K		9.3		9.9	53.6			9.5		25.0	53.5			9.5		31.5	24.9	
8.7		25.0	51.1	K		9.1		18.8	45.7			9.3		10.6	48.6			8.3		25.0	40.1	K		9.1		37.0	17.2	
9.4		37.7	27.5			8.3		22.1	8.3	R		9.3		16.8	35.3			9.3		47.3	6.8			9.1		38.3	12.3	
9.5		49.3	5.9			9.5		30.5	7.8			9.5		17.1	22.1			9.3		52.1	9.6			8.5		38.3	44.9	K
9.1	19	1.1	47.4	K		9.5		42.1	13.7			9.5		19.9	46.5			7.7		59.7	55.0	K		7.0		39.7	6.4	K
9.5		10.3	24.9			9.5		45.2	27.8			9.3		23.7	53.4			9.2	44	2.7	57.4			9.0		48.5	50.1	K
9.5		41.7	17.5			9.5		53.7	9.7			9.0		32.7	6.3	K		9.5		14.4	29 2			9.2		54.5	3.7	
9.5		52.4	7.6			9.5		57.0	55.0			9.5		36.2	39.1			7.3		25.5	29.5	Kb		9.5	52	42.9	54.3	
9.0		59.7	45.0			7.7	29	9.8	47.3	K		9.5		40.3	57.2			9.1		26.3	17.4			9.4		56.0	37.5	
9.3	20	0.8	49.6			8.5		15.8	39.3	K		9.4		45.9	20.9			9.5		29.0	56.5			9.4	53	27.2	40.0	
9.4		25.1	28.2			9.5		25.3	45.9			9.0		52.7	31.5	R		9.4		40.5	58.3			9.5		44.0	5.0	
7.8		27.8	14.8	K		9.4		43.9	20.6			8.5		57.7	16.4	K		9.3		45.4	2.9			9.5		49.0	57.0	
8.5		36.6	8.9	K		9.5		44.6	55.2			8.8		59.5	6.9	K		9.5		46.0	5.3			9.3		57.9	13.5	
9.0		45.1	54.5			9.3		50.1	40.8			8.7	36	8.0	15.6	K		9.5	45	0.5	54.8			9.3	54	3.0	20.7	
9.0		46.0	19.7			9.5	30	13.1	34.8			8.8		18.4	50.4	K		9.5		7.5	29.1			8.5		5.9	36.5	K
8.6		52.4	54.9	K		9.5		37 0	22.9			9.5		19.3	5.9			9.5		34.8	11.3			9.5		13.5	48.5	
9.2		53.2	48.0			5.2		44.3	8.7	Kb		9.5		38.9	55.0			9.5		39.9	11.6			9.5		21.7	47.1	
9.5	21	15.3	28.6			8.1		49.9	8.6	K		9.5		46.7	6.6			8.9		44.5	47.2			9.5		38.9	56.4	
9.5		17.5	56.1			9.5	31	3.3	35.3			8.5		50.0	38.6	K		9.5		46.9	54.7			9.5		40.0	17.2	
		+	+					+	+					+	+					+	+					+	+	
10 pr.		*26.98*	*1.09*			*10 pr.*		*27.04*	*1.24*			*10 pr.*		*27.09*	*1.33*			*10 pr.*		*27.15*	*1.44*			*10 pr.*		*27.21*	*1.54*	

4101—4160					19ʰ—20ʰ		+16°	
m			′	″	′	
9.5	54	57.9	44.8	
9.5	55	1.0	49.5	
7.4		11.8	7.3	R
9.5		20.8	25.4	
9.2		21.4	54.7	
9.2		23.2	23.0	
9.4		24.8	45.3	
9.5		26.7	54.7	
9.4		43.4	17.0	
9.5		45.9	59.2	
9.3	56	3.5	38.9	
9.5		9.3	0.3	
8.8		13.5	26.5	K
9.5		26.8	57.5	
9.3		30.0	44.9	
9.3		51.0	15.7	R
8.8	57	10.0	38.9	R
*7.5		23.5	19.2	K
7.0		24.9	43.6	K
8.7		33.5	35.5	S
5.5		36.1	40.7	K
8.7		41.4	14.0	K
9.0		47.2	50.1	
9.5	58	4.5	11.3	
9.5		6.5	58.2	
9.5		11.8	1.5	
9.3		23.7	29.9	
9.5		24.2	55.3	
9.5		30.2	32.0	
9.1		32.8	27.6	
8.5		34.6	16.2	K
9.4		43.0	53.5	
8.2		49.5	24.4	K
9.2		59.4	51.4	
9.1	59	15.0	43.8	K
9.2		27.5	8.0	K
9.5		28.1	24.3	
9.5		33.9	32.4	
9.3		35.9	9.8	
8.8		45.8	3.8	K
9.4		49.1	48.9	
9.0		49.8	47.9	
9.5		50.8	33.9	
9.2		53.7	4.8	
8.4	0	13.8	27.7	L
9.5		34.3	2.9	
9.5		43.5	53.0	
9.5		44.0	59.5	
7.8		53.2	36.5	P
7.0		55.2	13.8	K
8.7	1	18.8	22.1	K
8.8		19.3	39.6	
6.5		31.8	15.5	K
8.5		33.8	37.8	K
9.5		36.2	49.5	
9.2		56.4	29.0	K
9.5	2	0.4	29.5	
9.5		4.0	8.7	
9.5		4.0	15.0	
9.5		19.3	10.0	
10pr.			*27.28*	*1.65*

4161—4220					20ʰ	+16°	
m			′	″	′	
9.5	2	19.8	17.6	
7.0		31.7	31.3	K
9.5		43.2	46.4	
9.5		50.8	36.8	
8.0		57.5	59.9	*B*
7.8		58.6	22.7	K
9.4	3	5.4	59.9	
9.0		43.7	43.0	
9.5		44.8	53.0	
9.5		52.6	26.2	
9.2	4	13.3	30.5	*R*
9.5		21.2	3.7	
9.2		22.6	51.7	K
8.8		26.6	44.7	K
9.5		31.8	11.6	
9.2		33.2	34.0	
8.2		39.5	25.1	K
8.4		56.3	43.7	K
9.0	5	10.6	30.6	K
9.4		36.8	21.6	
9.0		38.6	7.1	K
9.1		38.8	58.8	*Rb*
8.9		39.4	18.2	K
9.5		45.5	47.5	
9.3		47.4	3.6	
9.3		51.8	51.6	
9.4	6	0.8	44.0	
9.3		1.5	16.1	
9.5		39.2	53.3	
9.3		50.5	54.8	*R*
9.5	7	2.3	17.5	
8.7		2.7	10.0	*B*
9.4		17.8	32.4	
9.5		21.0	54.4	
9.4		21.1	33.2	
8.2		23.7	25.4	*B*
var		25.2	18.2	*B*
9.2		41.1	53.9	K
9.3		43.8	35.8	*R*
9.3		46.1	17.9	*a*
9.5	8	7.2	47.0	
9.5		8.2	52.4	
9.2		14.8	20.3	
*9.5		31.5	34.2	
9.5		41.7	1.1	
9.5	9	37.7	30.1	*R*
9.5	10	17.8	37.8	
8.0		19.8	19.5	K
9.3		39.0	58.3	
9.5		56.2	38.9	*K*
9.4		57.0	27.4	
9.5	11	3.2	31.0	
9.5		4.6	1.8	
9.4		21.5	13.2	
9.0		31.2	54.7	K
9.1		35.8	55.1	K
9.3		41.0	21.2	
9.1		49.2	15.6	
8.8		55.1	0.9	K
7.0		59.7	54.2	K
10pr.			*27.35*	*1.76*

4221—4280					20ʰ	+16°	
m			′	″	′	
9.5	12	4.8	45.3	
9.4		20.2	56.6	
9.4		31.0	56.0	
9.3		50.2	51.9	
9.3	13	30.1	54.3	
9.5		42.8	31.8	
8.8		52.8	6.2	
9.4		52.8	3.4	
9.5		54.4	52.7	
9.4	14	11.0	28.4	*R*
9.5		30.9	31.5	
9.5		31.3	25.4	
9.2		37.4	28.7	*b*
9.5		42.5	17.3	*R*
9.5	15	5.7	3.7	
9.0		32.2	59.3	
8.0		49.5	28.0	*B*
9.4		55.6	9.8	
9.5	16	11.2	42.1	
9.4		11.3	59.1	
9.4		11.8	48.8	
8.5		13.1	1.6	K
8.8		34.2	31.5	*Kb*
9.3		46.6	28.2	K
9.5	17	12.6	49.4	
9.3		13.1	23.2	K
9.5		13.6	41.7	
9.5		21.0	4.8	
9.5		40.9	1.2	
8.2		42.5	24.7	K
9.4		59.2	37.5	
9.4	18	0.8	51.4	
9.2		19.0	35.0	
9.1		27.2	35.8	
8.8		36.8	31.2	K
9.5		58.2	59.8	
9.5	19	37.5	20.5	
9.4		43.5	13.6	
6.5		45.6	52.1	K
9.0	20	11.8	27.8	K
9.5		16.8	41.3	
8.0		36.5	14.3	K
9.4		53.2	57.0	
9.1	21	7.7	53.2	*R*
9.1		8.7	48.8	
9.5		17.0	57.3	
9.3		23.2	39.0	
9.2		25.3	25.5	*a*
9.5		38.5	19.8	
9.0		44.5	52.8	
9.5		50.8	35.3	
8.8		52.8	10.6	K
9.1	22	12.5	41.8	
9.5		14.2	27.7	
8.4		23.2	31.1	
9.5		29.8	59.0	
8.9		31.8	8.9	K
9.5	23	0.0	51.2	
9.5		5.8	24.2	
9.0		10.2	45.3	
10pr.			*27.46*	*1.89*

4281—4340					20ʰ	+16°	
m			′	″	′	
8.7	23	20.5	46.0	
8.9		39.9	35.5	
9.5		58.5	10.5	
9.3	24	4.1	51.7	K
7.7		23.8	35.3	L
9.3		42.5	54.9	
9.5	25	8.5	49.8	
7.5		13.8	30.5	L
9.5		41.8	7.7	
9.3		59.5	57.2	
7.2	26	4.2	15.6	K
9.0		7.6	28.3	
9.0		20.2	44.5	K
9.5		23.8	50.6	
9.1		30.5	56.9	
8.5		30.7	52.1	L
9.4		36.2	58.3	
9.5		37.5	5.0	
9.4		49.5	47.1	
9.1		58.0	55.9	K
9.5	27	3.5	31.5	
9.5		4.0	16.3	
9.1		45.2	38.4	K
9.3		46.1	17.9	
9.5		56.5	34.2	
9.5	28	5.8	55.0	
9.0		9.8	12.2	K
9.2		18.5	15.4	K
9.5		19.5	24.5	
9.5		24.4	59.6	
9.5		40.0	45.3	
9.5		48.8	39.1	
9.5	29	13.5	28.0	
9.5		30.0	50.0	
7.0		34.6	19.2	K
8.5		54.8	38.7	
8.5	30	0.8	12.3	*Kb*
9.5		27.2	50.8	
8.5		33.1	3.2	K
9.1		54.7	23.6	
9.0		55.5	40.1	K
8.9		59.1	39.9	B
9.4	31	24.5	46.0	
9.1		27.4	55.8	K
9.5		55.5	7.8	
9.5		59.2	22.1	
9.2	32	5.2	19.8	*b*
9.5		7.5	14.3	
9.3		24.8	43.5	K
9.5		25.9	51.0	
9.5		44.8	43.3	
9.5		47.2	30.1	
9.5	33	18.0	8.0	
9.5		24.0	1.7	
9.2		38.0	15.3	
9.3		39.2	9.0	
9.5		46.0	5.0	
9.3		48.5	25.5	
9.5		49.5	9.3	
9.5	34	3.2	21.4	
10pr.			*27.56*	*2.01*

4341—4400					20ʰ	+16°	
m			′	″	′	
9.4	34	27.9	8.0	
8.9		36.8	29.7	
9.5		42.7	30.7	
9.5		50.5	37.0	
9.5		54.5	35.0	
8.8		56.3	53.5	*Kb*
9.3	35	26.5	16.7	K
9.4	36	5.3	38.3	
9.5		10.5	43.9	
8.3		22 8	35.3	K
var		24.1	34.2	K
9.4		27.5	53.0	
9.5		34.8	57.3	
9.5		36.8	40.1	
8.7		46.8	26.3	K
9 5		56.5	34.2	
9.3	37	55.4	56.3	
9.5	38	3.5	42.8	
9.5		32.8	59.3	
9.5		52.7	57.2	
9.5		55.5	42.8	
8.8	39	7.9	5.5	
8.0		44.6	23.5	K
9.5		55.2	17.4	
9.5		55.5	51.8	
9.5	40	29.8	37.7	
9.2		32.9	3.9	K
9.4		39.0	55.9	
*8.1	41	4.1	14.4	B
*9.3		15.3	59.6	K
9.5		38.8	35.3	
8.9		40.8	5.3	K
9.5		46.2	10.4	
8.8		49.7	22.5	
9.5	42	17.1	52.2	
9.2	43	16.9	58.9	*R*
9.4		22.8	26.0	*R*
9.3		26.2	33.6	
9.1		27.9	43.3	K
8.6		36.2	41.2	K
9.4		46.0	24.6	
8.5		53.6	54.2	K
9.5		55.9	1.0	
9.1	44	0.8	19.1	
9.4		8.9	57.9	*Kb*
9.3		27.4	10.0	
9.4		32.5	16.2	
8.8		36.5	23.1	K
9.4		54.8	5.5	
9.4	45	21.7	7.1	
8.7		26.1	23.2	K
9.5	46	1.2	41.2	
9.5		13.5	10.8	
9.3		38.5	21.5	
9.3		41.8	47.0	
9.5		59.6	52.9	
9.5	47	18.8	31.1	
9.5		33.1	53.1	
9.5		44.5	35.4	
9.1		59.2	44.3	
10pr.			*27.70*	*2.17*

4117a 9.0 | 57 20.5 | 40.8 | *B*

4204a 9.5 | 8 31.8 | 17.4 |

4369a 9.5 | 41 7.3 | 11.3 | *a*

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	20ʰ—21ʰ		+16°			21ʰ		+16°			21ʰ		+16°			21ʰ		+16°			21ʰ—22ʰ		+16°	
■	′	″	′		■	′	″	′		■	′	″	′		■	′	″	′		■	′	″	′	
7.5	48	20.2	42.1	Kb	9.5	1	30.0	30.2		9.2	16	40.6	7.6		7.8	37	29.9	24.2	L	9.4	52	24.2	12.3	B
9.5		30.8	38.4		9.1		38.0	41.6		9.3		43.1	52.0		4.0		40.1	41.7	L	8.0		26.6	26.1	K
9.5		50.5	47.0		9.0		50.0	32.9	K	9.0		47.0	39.5		9.5	38	0.4	53.2		8.5		30.2	37.8	K
8.3	49	3.1	43.5	K	9.5	2	26.6	57.2		9.5	17	5.6	56.5		9.0		18.6	18.5	B	9.2		45.7	40.7	B
9.3		38.8	28.7	K	8.7		27.5	16.7	L	9.4		15.3	47.8	B	9.0		23.2	7.6	K	9.0		47.6	4.3	K
9.1		50.8	41.1	K	9.2		41.6	45.7		8.7		24.5	41.4	B	9.1		32.8	2.2		9.5	53	15.9	32.0	
7.0	50	18.6	33.8	Kb	9.4	3	8.6	4.1		9.5		34.6	58.7		8.5		39.9	13.8	K	9.0		19.9	17.1	K
9.3		43.2	49.1		8.8		46.7	14.8	B	9.3	18	11.3	49.9		9.0		42.8	6.8		9.5		23.8	20.2	
9.3		44.6	20.8		8.2		47.3	23.5	B	9.3	19	8.3	23.6	b	9.4		57.4	14.1	a	9.1	54	8.0	36.7	b
9.1	51	21.0	26.0		9.5		48.0	3.9		9.2		47.9	7.3		9.3	39	12.4	37.3		9.3		26.2	14.4	
9.1		23.5	8.0		9.0		52.2	40.6	B	9.5	20	5.9	58.1	B	8.8		17.1	6.3	K	9.5		34.9	20.9	
7.8		24.1	30.5	K	9.4	4	17.8	28.5	B	9.1		21.5	43.9	b	9.3		19.6	48.3	B	9.2	55	46.6	31.3	K
8.4		27.3	0.4	K	9.0		31.2	0.8	K	9.2		27.6	5.7		9.5		21.3	57.8	B	9.3	56	5.2	13.7	
8.0		40.5	42.7	K	9.2	5	20.6	59.2		9.5		46.5	11.8		9.4		22.8	22.0	B	9.5		24.9	22.3	
9.0		47.0	14.2		7.3	6	30.6	20.8	K	9.2		59.8	49.6		9.4		28.1	48.7	B	9.1		44.8	1.2	K
8.3	52	2.2	21.1	K	8.7		52.0	43.4		9.5	22	1.9	15.6		9.5		29.6	53.2	B	9.2	57	44.0	56.3	K
8.4		4.9	59.1		9.5		55.1	55.1		8.3		8.9	42.8	K	9.0		40.0	42.1	B	9.5		53.1	4.7	
9.3		9.0	34.1	B	8.6	7	5.4	38.5	B	9.5		47.9	23.5		6.0	40	12.3	32.4	K	8.7		58.4	46.6	Kb
9.5		20.8	13.2		8.9		22.2	52.2		9.3		51.4	41.4		9.5		42.2	18.8		9.5	58	29.6	11.6	
9.3		21.9	55.7		9.5		49.0	32.3		9.5		57.2	58.5		9.4		44.5	3.1	B	7.7		37.4	48.5	K
9.5		46.5	58.6		9.3		56.5	48.5		9.5	23	24.1	36.2		9.5		47.7	37.6	B	9.5		44.5	14.7	
9.5		47.5	39.0		9.0	8	8.1	13.9		9.2		49.2	52.5		9.5		57.9	36.1		9.1		50.6	30.3	
9.5		50.8	34.9		9.2		32.5	40.5		9.5		56.1	5.4		9.5	41	1.3	1.0		9.5	59	13.2	5.2	
9.3		55.7	31.9		9.5		45.1	55.3		9.0	24	9.2	50.2		9.5		6.6	26.4		9.2		20.7	29.6	
6.2	53	6.5	15.8	K	8.8		48.1	15.0	K	9.3		34.9	16.6		9.5		29.9	45.0		7.3		44.5	2.5	K
9.0		9.5	17.0	K	6.5		56.0	8.0	K	9.5		45.4	22.1		9.5		42.6	1.5		9.5		46.2	53.5	
9.1		11.3	12.9	K	9.4		58.5	27.5		9.3	25	4.0	3.8		8.0	42	24.1	54.3	K	9.5		53.0	10.6	
9.5		12.6	4.0		9.4	9	1.8	33.7	B	9.4		14.4	18.0		9.0		41.2	20.6		9.2		54.4	54.9	K
9.1		56.2	30.8	K	9.5		47.6	16.0		9.5		16.4	11.0		9.5	43	6.6	19.8		9.3	0	22.1	38.5	
8.0		58.6	52.8	K	9.5	10	14.5	20.2		9.0		36.7	11.4		8.3		10.1	57.7	K	8.5		31.1	54.4	K
9.0	54	12.1	40.5	K	9.4		19.1	16.8	R	9.5		36.9	26.6		9.5		14.2	17.8		9.2		55.9	57.8	K
9.5		59.0	3.1		9.4		35.4	54.8	B	9.5		51.6	51.2		5.5		15.9	37.8	Kb	9.3	1	7.0	15.0	
9.5	55	11.2	42.5		9.5	11	0.6	9.5		9.5		58.1	10.4	B	9.5	44	3.2	52.3		7.3		12.4	51.1	K
9.3		22.5	41.2	K	9.5		4.0	29.4		9.5	26	14.3	8.7	B	9.0		56.5	27.5	Kb	9.5		20.6	8.2	
9.3		29.9	34.6	K	9.0		5.5	31.6	K	9.1		19.1	42.8	K	9.5		59.6	5.2		8.9	2	37.3	44.4	R
8.5		30.5	14.3	K	9.4		28.6	55.0		9.5		27.4	49.7	-	9.0	45	7.6	17.5		8.9	3	10.4	3.9	K
9.4	56	5.1	52.4		9.4		44.8	7.4	B	9.2		48.5	59.9		9.5		21.1	12.6		9.3		11.0	8.6	
9.0		14.1	0.0	B	9.0	12	6.1	35.0		9.4	27	7.9	56.5		9.5		25.2	40.2		9.5		19.3	52.8	
9.4		20.4	5.6	B	9.1		18.9	54.9		7.8		10.0	48.3	K	9.3	46	6.9	34.7		9.5		26.3	57.7	
9.2		22.6	53.7		9.0		45.5	42.6	K	9.0		37.9	32.4	K	8.8		28.9	24.0		9.5		29.6	17.2	
9.3		23.8	3.8	K	9.5		58.1	48.4		8.8		41.9	59.9		9.3		32.9	45.4		9.3		36.3	11.5	K
9.3		38.5	20.5	K	7.0	13	32.5	11.8	K	9.5		45.6	26.5		9.5		42.8	54.1		9.5		55.3	54.8	
9.1		49.1	14.0	K	9.5		47.9	58.6		9.5		48.4	3.9		9.4	47	15.1	11.1	B	9.0	4	21.2	41.2	K
9.4		50.1	53.7		9.4	14	4.0	14.2		8.2	29	0.6	52.0		9.5		19.5	5.8	B	8.6		31.1	48.6	K
9.4		58.1	38.5		8.9		21.8	8.1	B	9.4		28.1	8.5		9.5		31.5	3.6		9.5		37.2	42.1	
9.5		59.5	46.0		9.5		35.1	58.9	B	9.4		35.1	34.2	B	8.3	48	48.6	24.0	K	9.3		39.4	31.5	
9.5	57	32.0	1.7		8.5		38.6	20.9	K	9.4	30	38.0	11.4	Bb	8.6		50.3	2.4		9.5		41.3	50.7	
8.3		35.7	55.3	K	9.1		44.1	9.1		9.5	31	32.5	6.2		9.5	49	9.6	16.0		8.7	5	36.7	28.0	K
9.5		46.9	35.7	K	8.0		45.1	32.0	K	9.5		59.5	5.6		9.1		27.4	31.0		9.5		43.9	34.7	
9.3	58	6.2	53.0	K	9.4		47.0	34.4		9.4	32	7.8	35.2	B	9.1		31.5	41.3	K	9.5	6	2.3	8.1	
9.5		20.0	48.9		9.2	15	2.1	21.1	K	9.2		8.2	29.9	B	9.4		54.6	11.6		9.5		46.9	3.8	
9.5		24.3	17.8		9.3		4.7	51.8		8.8		15.1	40.8		8.0	50	0.6	44.2	Kb	9.3		47.3	14.3	
9.4		26.2	59.2		7.8		12.3	36.4	K	9.3		35.1	10.5		9.3		8.3	3.2		9.2		50.0	32.5	
8.5		53.0	18.5	Kb	9.1		20.6	7.4		9.0	33	7.4	56.0		7.3		9.7	59.5	K	6.7	7	21.6	28.4	L
9.4	59	15.5	44.4		9.5		23.5	27.8		8.5		30.4	40.0	K	9.0	51	9.9	28.8		9.5		39.2	30.5	
9.4		36.6	41.6	R	9.1		25.1	17.7	K	9.0		59.3	3.3	K	9.5		20.0	51.7		9.5		50.5	57.4	B
9.5		38.8	58.4		9.5		52.0	45.3		9.5	34	27.4	59.4		9.1		20.4	44.2	B	9.1	8	19.3	5.5	K
9.5	0	21.0	26.4		9.4	16	4.8	32.1	B	9.5		34.2	20.7		9.0		20.6	32.3	B	9.3		25.0	23.4	
9.0		21.8	27.5		9.4		12.2	4.6	B	9.5		51.9	24.9		9.4		33.2	35.4		8.8		35.2	13.9	K
9.0	1	20.1	31.0	K	9.5		38.5	24.0		9.3	35	50.4	24.9		9.3		37.7	36.6	B	9.5		54.9	31.4	
		+	+				+	+				+	+				+	+				+	+	
10pr.		27.85	2.30		10pr.		28.04	2.46		10pr.		28.25	2.61		10pr.		28.49	2.77		10pr.		28.75	2.90	

4701—4760

	22ᵃ	+16°	
m	′ ″	′	
9.5	9 8.3	43.2	R
9.0	20.6	46.0	K
9.5	21.3	16.2	
9.2	10 11.2	56.5	
9.5	16.0	42.3	
8.8	18.2	31.0	K
8.4	32.9	5.6	R
9.0	34.2	23.8	
8.2	42.0	40.9	K
9.5	11 58.7	54.1	
8.2	12 48.0	3.9	K
8.9	55.9	9.3	K
9.4	13 26.2	38.4	
9.4	33.1	57.0	
9.5	49.2	18.4	
9.2	53.7	6.1	K
9.1	14 56.3	45.6	R
9.3	15 12.5	5.2	
9.0	27.7	33.1	R
9.0	41.2	42.4	K
9.5	16 9.4	29.3	
9.5	12.7	6.4	
9.3	24.1	49.1	
7.5	28.3	55.2	Kb
9.4	39.0	45.3	
9.1	47.9	2.5	K
8.3	17 11.2	16.7	K
8.4	35.3	9.4	K
9.5	37.4	19.3	
9.0	38.7	13.7	K
8.7	45.9	37.4	K
9.5	55.9	33.5	
9.0	18 13.9	3.0	K
9.5	19 3.3	53.1	
9.5	6.4	18.2	
9.3	10.7	26.0	
8.8	22.9	44.2	K
9.3	43.7	13.5	
9.5	45.3	12.4	
8.3	47.3	26.3	K
9.2	48.9	34.0	
8.2	54.2	46.4	K
8.2	20 15.9	20.4	K
9.5	36.7	2.4	
9.5	21 8.9	48.0	
7.5	11.4	31.6	K
9.5	18.7	43.4	
8.6	46.7	23.8	K
9.3	51.1	56.0	
9.4	56.4	10.6	
9.5	22 14.8	35.9	
8.7	40.3	8.2	K
8.5	55.6	8.0	K
8.5	57.9	20.4	K
9.5	23 6.7	11.4	
9.2	19.3	9.5	K
9.1	41.9	21.4	
9.1	51.2	31.5	Rb
9.5	24 12.4	52.4	
9.3	13.2	55.6	
	+	+	
10pr.	29.01	3.01	

4761—4820

	22ᵃ	+16°	
m	′ ″	′	
9.3	24 28.2	46.9	K
9.5	39.9	28.5	
8.7	25 27.7	55.8	R
8.8	26 10.1	50.6	R
9.2	11.7	47.4	a
9.5	45.7	44.9	
9.1	27 10.4	59.9	
7.8	14.0	24.8	L
9.4	25.1	6.0	
9.5	56.0	46.0	
9.3	28 12.5	28.1	
9.5	26.0	21.8	
9.3	36.5	34.2	R
9.2	29 12.7	13.0	K
9.5	40.8	4.4	
9.5	48.0	18.7	
6.8	58.5	25.7	
7.8	30 6.5	32.1	L
9.5	41.5	32.5	
9.4	31 6.7	4.0	
9.5	24.8	6.5	
9.4	33.4	51.9	
8.0	51.0	20.6	K
9.0	55.5	39.7	
9.5	56.3	27.0	
9.5	56.8	2.0	R
9.4	32 3.4	2.7	αR
9.2	11.6	56.7	
9.3	34.0	40.1	
8.8	54.0	25.4	
9.0	33 7.8	48.4	
9.0	10.0	13.6	K
8.9	18.3	8.5	
9.3	37.5	24.7	
9.5	34 19.0	13.6	
9.5	44.5	22.6	
9.5	56.7	34.7	
9.3	59.7	26.6	
9.4	35 2.2	53.8	
9.5	35.7	1.9	
9.5	44.0	28.4	
7.9	36 12.5	29.7	K
9.1	15.9	6.4	
9.3	29.0	22.1	
9.5	49.0	54.1	
9.5	37 21.0	48.1	
9.3	44.3	51.2	
8.8	44.5	34.8	
8.5	38 12.3	15.6	
9.5	23.0	58.1	
8.9	37.7	59.8	
9.5	39 8.2	57.8	
9.4	10.3	0.4	
7.7	57.0	28.6	K
9.5	40 16.7	46.4	
9.5	41 20.3	18.2	
9.5	54.0	44.1	
9.1	42 13.5	21.4	b
8.8	26.9	1.2	K
9.3	43 2.1	57.3	
	+	+	
10pr.	29.25	3.11	

4821—4880

	22ᵃ—23ᵃ	+16°	
m	′ ″	′	
9.2	43 14.8	26.5	b
9.4	25.9	2.5	
9.3	50.5	52.0	
9.3	50.5	41.9	
9.5	44 10.0	56.8	
9.5	19.5	5.7	
9.5	28.2	46.5	
9.5	58.8	17.1	
9.3	45 1.4	6.6	
8.4	43.0	44.1	
5.5	54.7	4.3	K
9.5	46 21.0	31.6	
7.0	47 28.0	10.1	K
9.5	44.5	56.2	
9.2	58.5	57.7	
8.8	48 53.3	58.6	
9.4	49 10.8	45.8	
8.7	12.7	41.0	K
9.5	24.3	9.3	
9.5	25.8	20.9	
9.3	39.5	51.0	
8.3	50 4.0	45.3	K
9.3	14.3	57.0	
8.8	15.3	24.7	Kb
8.8	16.2	54.1	K
8.7	51 3.5	34.1	K
8.6	41.8	16.6	K
9.0	52 53.2	37.0	
9.0	53 50.2	57.8	
9.3	54.9	43.8	
9.3	55.2	41.2	
9.2	54 30.0	50.6	
8.9	51.7	31.3	
8.5	58.4	54.3	
8.8	55 38.4	11.8	
9.1	40.0	57.3	
9.3	55.0	36.5	
9.3	56 48.2	50.9	
8.8	58.5	28.1	K
9.5	57 10.5	15.2	
9.4	17.0	8.0	
9.2	24.2	27.9	
8.7	34.1	9.4	K
9.4	55.4	33.2	
8.1	56.0	32.8	K
9.5	59 0.4	0.0	
9.4	0 0.7	45.6	
9.4	0.8	48.5	
9.5	3.7	17.4	
9.3	32.0	51.3	
9.0	38.0	34.8	
9.5	38.2	22.3	
8.9	43.4	12.5	K
8.3	57.0	2.8	K
9.2	1 5.9	41.6	
9.3	33.0	30.5	
9.3	39.0	25.8	
9.2	53.2	21.6	
9.3	2 33.1	8.0	
8.9	51.3	45.6	K
	+	+	
10pr.	29.57	3.21	

4881—4940

	23ᵃ	+16°	
m	′ ″	′	
8.9	2 59.3	28.6	
5.8	3 31.0	48.0	K
8.9	42.1	5.6	
8.8	45.1	1.7	K
9.5	4 43.0	25.1	
9.5	46.7	33.4	
9.3	5 12.4	30.0	
9.5	6 53.0	37.2	b
9.5	8 4.7	44.7	
8.8	9 14.3	44.8	K
9.1	20.8	56.0	
9.5	31.7	32.4	
9.0	46.8	48.6	K
9.5	51.2	7.6	
8.5	10 1.0	40.0	K
8.0	17.3	4.2	K
9.0	21.3	23.8	
8.3	50.3	25.9	B
9.0	11 3.5	39.7	K
7.8	4.2	11.8	L
8.3	7.9	55.3	K
9.0	17.8	44.7	K
9.5	34.0	33.1	
8.5	41.3	12.4	K
9.4	12 20.5	5.1	
8.5	35.1	52.5	K
9.0	39.7	55.7	
9.4	13 6.5	0.4	B
9.5	11.4	2.6	
9.3	15.0	47.2	a
9.5	29.3	55.2	
7.0	43.0	27.6	K
9.5	14 1.0	38.0	
9.5	5.0	48.7	R
9.5	12.3	37.3	
9.0	20.3	16.5	K
9.3	15 36.3	12.1	R
9.1	16 10.0	42.8	b
9.1	14.0	47.7	
9.5	15.0	6.9	
9.5	21.3	51.0	
9.5	17 0.3	21.0	
9.5	2.6	29.9	
9.5	49.0	8.4	
9.0	18 8.0	26.6	
8.2	14.7	51.4	K
9.3	30.3	48.3	
7.8	19 13.3	42.8	K
9.3	20 11.3	50.3	
9.5	59.5	13.4	
9.4	21 54.0	51.0	
8.3	22 6.1	2.0	K
9.3	8.7	49.3	
9.3	21.3	19.7	
9.3	25.7	50.5	
9.5	45.7	50.5	
8.5	23 33.5	45.2	Kb
9.0	59.0	11.7	
9.0	24 14.0	6.3	
9.4	36.1	5.6	
	+	+	
10pr.	29.92	3.27	

4941—5000

	23ᵃ	+16°	
m	′ ″	′	
9.4	24 38.3	1.2	
9.3	52.1	39.4	
9.3	55.8	48.0	
8.8	25 7.0	36.9	Kb
9.5	26 38.2	2.0	
9.0	27 7.2	42.4	K
9.5	41.3	15.8	
9.5	28 15.0	30.0	
9.3	34.5	42.0	Kb
8.8	45.5	8.2	
8.8	29 46.9	50.7	
8.8	47.3	58.6	
9.2	30 17.6	51.0	K
6.4	19.6	1.6	K
9.5	48.2	59.4	
7.8	58.2	15.3	K
8.0	31 2.7	46.8	K
9.2	15.9	52.9	K
7.8	40.7	12.2	K
9.3	45.1	53.4	
9.5	32 19.7	21.2	
9.4	33.3	4.8	
9.5	33 22.7	20.9	b
9.5	34 4.7	25.0	
9.5	39.2	7.4	
9.5	35 3.2	21.1	
9.5	12.2	21.3	
9.4	13.9	56.2	K
9.5	51.9	8.7	
9.5	36 2.5	4.4	
8.5	8.2	26.0	
9.5	23.0	41.4	
7.8	39.7	42.9	K
8.9	38 3.4	47.8	
9.3	27.9	52.5	
8.5	32.2	21.5	K
9.5	58.2	26.3	
9.0	39 1.7	21.8	K
9.5	7.4	30.5	
8.5	9.5	16.6	K
9.5	11.7	36.6	
9.5	26.8	54.9	
8.0	31.0	44.2	L
9.0	37.2	37.0	R
9.5	40 7.7	40.9	
7.7	11.6	8.3	K
9.5	20.8	43.7	B
9.2	27.7	36.0	
7.8	30.2	17.4	K
8.0	30.5	15.7	K
9.5	41 6.3	16.6	
9.5	20.2	32.5	
8.9	37.7	29.5	K
9.5	43.4	6.7	
9.5	52.1	8.7	
9.5	58.7	33.7	
9.5	42 3.6	49.5	
9.0	24.8	4.4	K
9.5	25.4	37.1	
9.5	28.2	32.3	K
	+	+	
10pr.	30.30	3.32	

4848a

9.0	53	49.0	59.8

5001—5009					5010—5018					5019—5027					5028—5035					5036—5043				
	23ʰ		+16°			23ʰ		+16°			23ʰ		+16°			23ʰ		+16°			23ʰ		+16°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	42	48.7	44.7		9.3	45	34.5	56.3	R	9.1	49	6.2	8.7	b	9.4	53	54.7	39.2	R	9.5	56	15.1	9.5	
7.7		53.2	51.1	Kb	9.0		49.9	2.5	K	9.5		59.7	44.3	K	9.4	54	12.9	10.1		7.8		45.1	37.4	K
7.3	43	8.2	48.4	K	9.5	46	38.2	44.7		9.3	50	9.2	26.4		9.3		31.2	31 9		9.5	57	3.1	13.6	
9.5		15.2	31.8		9.5		50.2	35.0		9.5	51	29.2	30.2		9.4		39.2	4.6		8.3		16.8	15.7	K
9.5		21.9	54.7		9.5	47	28.2	55.3		9.5		59.2	25.7		9.5		57.9	5.7		8.7		33.5	29.9	
9.5		53.6	8.3		9.5		48.5	58.0		9.1	52	25.4	3.9		9.1	55	22.0	19.2	b	8.5	58	5.6	18.5	
9.5	44	11.9	2.1		9.3	48	12.6	52.4	b	9.1		38.2	38.4	K	6.0		47.1	44.0	K	8.6		16 5	1.6	K
9.5	45	4.7	22.5		9.5		38.7	26.4		9.5	53	7.5	18.1		9.5	56	11.6	27.1		9.1	59	1.6	17.7	a
9.5		32.7	26.3		9.4		55.4	38.1		8.5		24.7	11.8	K										
												+	+											
										10pr.		*30.57*	*3.34*											

Zone +17°

1—40					41—80					81—120					121—160					161—200				
	0ʰ		+17°			0ʰ		+17°			0ʰ		+17°			0ʰ—1ʰ		+17°			1ʰ		+17°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	0	31.0	54.0		9.0	15	55.8	44.1	L	9.2	29	33.3	30.7		9.5	48	0.3	5.3	B	9.5	1	51.3	1.0	
9.1		31.6	48.7	K	9.0	16	22.0	46.5	K	9.2		47.4	21.0	K	9.0		43.2	18.9	K	9.0	2	25.2	49.1	
9.5		49.5	1.7		9.5		27.6	59.2		9.5	31	47.2	47.8		8.2		59.9	9.9	K	9.0		39.5	23.8	
9.1		57.0	54.7	K	9.4		31.4	18.2		9.2	32	6.3	6.8	K	9.0	49	8.0	9.9	K	9.2	3	2.8	51.1	
8.8	1	11.8	7.5		9.5	17	20.7	46.2		9.5		28.4	40.1		9.5		17.7	48.6		9.1		6.1	58.5	
9.5		25.8	53.3		9.5	18	6.1	11.8		9.2		42.2	28.7	b	9.0		29.8	27.6	K	8.8		15.6	37.0	
5.7		34.9	26.7	P	9.0		15.3	38.5	L	9.5	33	57.6	55.8		9.4		37.4	46.5		9.3		39.0	54.6	
9.5	2	31.1	58.4		9.3		28.8	10.9	K	9.5	34	1.5	47.6	B	9.5		45.6	42.0		9.5		43.7	18.6	
8.7		55.1	51.2	K	8.5		39.4	46.0	K	9.0		16.1	3.6	B	9.1		51.2	49.8	K	9.5	4	20.8	12.6	
9.5	3	1.3	17.5		9.5		50.6	58.5		9.5		38.0	41.1		9.0	50	15.2	22.5		9.5		29.2	53.1	
9.4	4	1.8	29.8		8.7	19	21.7	22.4		9.1	35	52.1	14.4		9.0		19.8	35.6		9.5	5	39.5	53.1	
9.3		10.5	31.0		8.5		28.0	5.6	K	9.5	36	12.3	59.8		9.5	51	24.0	6.8		9.5	6	10.5	22.1	b
9.4		33.4	13.3		9.5		54.8	56.1		8.1		31.7	7.7	K	9.5		28.2	37.3		9.5	7	14.1	21.0	
9.5		45.4	55.6		9.2	20	19.3	14.3	K	9.5		49.8	48.0		9.5		41.1	50.8		9.5		19.2	50.8	
9.5	5	22.5	57.8		5.4		29.6	5.1	Kb	9.5	37	32.2	2.6		7.5	52	35.5	25.5	L	9.5		31.6	3.2	
9.1		44.8	37.8		9.5	21	17.7	45.4		9.0	38	1.0	38.0	K	9.3		39.4	7.0		8.5	8	46.5	45.6	Kb
8.4	6	16.0	49.3	K	9.5		24.2	45.2		9.0		7.3	49.9		7.2		47.3	54.0	K	8.8		52.8	7.0	K
9.0		20.5	6.9	K	9.5		57.7	39.5		9.1	39	2.4	25.5	K	8.0	53	7.5	43.2	K	9.3	9	5.7	2.6	
9.5	7	42.2	44.1		9.0	22	5.7	41.2	B	9.5		10.7	20.7		8.2		23.1	3.5	K	9.2		24.9	1.0	K
9.4	8	32.1	24.4		9.4		20.3	54.7	B	9.4		17.6	57.5		9.5		36.0	20.3		9.4	10	15.8	35.3	
9.0		40.3	20.1		8.6	23	4.2	1.0	K	9.0		27.2	3.9	K	8.0		44.5	43.9	K	9.2		17.3	38.9	B
9.5	9	29.0	39.4		9.4		10.2	4.3	R	9.2		43.5	49.3	K	9.5	54	1.2	34.1		9.2		34.2	31.8	
9.2		44.1	23.5		9.0		33.0	31.5	L	9.5	40	2.2	58.1		9.5		36.7	4.0		8.0		38.0	49.4	K
9.5		48.4	11.1		8.8	24	1.5	24.2		9.0		56.8	13.4		9.5		48.5	45.4		7.3	11	40.0	21.8	K
9.5	10	5.3	52.4		9.2		18.0	7.2	K	7.5	41	7.0	53.4	L	9.3	55	24.1	19.0		9.3		52.2	57.8	
9.5		24.4	40.3		8.1		18.5	17.6	K	7.5		10.2	31.7	L	9.5		26.1	8.2		9.0		55.7	50.2	
9.0		25.2	13.7		7.1		58.6	59.0	K	9.3	42	25.8	51.2		9.4		37.0	42.7		9.5	12	14.8	54.1	
9.5	11	36.9	54.9		8.5	25	25.7	35.3		9.3		27.8	55.5		9.3		49.0	49.5	R	9.5		36.1	9.2	B
9.2	12	18.2	26.5	b	9.2		30.9	55.5		9.3		37.0	55.8		9.5	56	37.7	10.3		8.2		37.0	21.3	K
9.5	13	2.0	14.1		8.7		41.5	9.6	Lb	8.7	43	2.0	59.9	K	9.5	57	0.0	26.6		9.5		50.8	59.9	
9.4		2.3	33.2		9.5		48.8	52.3		9.5		34.1	8.1		9.5		12.3	52.5		9.5		57.6	56.0	
9.4		17.4	52.9		9.0	26	19.7	13.7	K	9.2		42.8	56.2	K	8.8	58	0.5	7.9		8.3	13	3.3	26.9	K
7.5		20.1	40.8	K	8.5		23.3	58.7	K	8.7	45	18.8	18.9	R	9.5		17.6	57.1		9.5		12.1	8.0	
9.5		41.9	12.7		9.5		43.0	37.6		9.0		23.1	40.4		9.2		19.1	32.6	B	8.8		20.1	33.2	
9.2	14	28.7	40.3		9.2		46.2	54.6	K	9.5		51.5	57.6		9.5		21.5	42.5		8.8		40.4	32.8	
9.0		41.7	26.2	K	9.1	27	31.5	23.1	b	8.0		53.4	35.8	P	9.0	59	9.7	12.2	B	9.4	14	0.9	56.4	
9.3		45.6	53.3		9.5		43.5	12.2		9.5	46	13.0	5.8		9.5		33.0	49.1		7.9		25.0	55.8	K
9.0	15	2.2	55.8	K	9.5	28	27.0	42.7		9.4		41.2	11.8	B	8.6	0	0.6	23.8	L	9.5		44.7	21.4	
9.4		28.5	54.3		9.5		47.2	49.5		8.9	47	32.4	27.5	B	9.3		13.8	10.0	B	9.5		49.9	4.6	B
9.5		34.7	6.5	*B*	9.5	29	5.5	5.8		9.3		40.5	1.3		9.5	1	33.0	8.2		7.2	16	4.1	3.2	Kb
		+	+				+	+				+	+				+	+				+	+	
10pr.		*30.88*	*3.34*		*10pr.*		*31.14*	*3.32*		*10pr.*		*31.44*	*3.29*		*10pr.*		*31.70*	*3.24*		*10pr.*		*32.00*	*3.19*	

201 — 260

	1ˢ		+17°	
m			′	
9.5	16	40.4	13.7	
8.8	17	0.0	44.7	K
9.1		43.7	45.8	
9.5	18	14.5	15.8	
9.3		22.6	8.6	
8.8		42.8	27.7	
9.5	19	25.4	14.6	
9.5		41.2	28.2	
9.1	20	23.6	58.6	
6.3	22	4.5	36.9	K
9.5		53.3	6.0	
9.5		59.5	7.5	B
9.5	23	9.5	11.0	B
9.0		23.8	55.8	
8.7		25.1	47.1	
9.1		26.7	11.9	B
9.3	24	16.8	8.7	B
9.4		33.3	8.7	B
8.9	25	11.2	46.4	
9.5		21.5	8.8	
9.2		24.9	49.5	
9.2		51.0	33.8	
9.2	26	8.3	23.8	Bb
6.3	27	0.5	42.8	K
9.4		38.6	49.7	
9.3	28	10.0	45.0	
9.5		15.9	47.9	B
9.5	29	9.5	56.1	
8.9		30.4	28.3	R
9 5		38.1	30.4	
8.9		40.6	56.4	
9.2		47.6	51.2	B
9.3	30	5.7	41.2	
9.5		10.6	14.4	
9.3		20.8	6.1	
9.3		23.1	30.7	
9.3		29.3	45.3	
9.3		41.9	11.2	
8.8	31	15.5	19.9	K
9.5		30.8	4.4	
9.4	32	23.0	5.7	B
8.9		42.5	8.1	
9.5		46.4	34.9	
8.9	33	12.6	31.9	
9.3		18.2	9.2	
9.5		33.1	5.6	
8.2		41.7	55.2	K
9.5		45.9	48.7	B
9.2		50.0	31.2	a
9.3	34	25.0	23.3	
9.5		36.8	3.0	
9.2		54.2	19.6	Bb
9.4		57.7	15.8	
9.5	35	20.6	38.3	
9.3		43.8	17.9	
9.3		52.1	0.8	B
9.5		52.6	24.3	
9.4	36	5.4	10.9	B
9.5		9.6	17.2	
9.5	37	58.5	3.1	
10pr.		32.32	3.09	

261 — 320

	1ˢ—2ˢ		+17°	
m	′	″	′	
9.5	38	29.6	15.0	
8.5	39	10.1	57.6	K
9.1		15.0	10.5	b
9.4		28.4	32.2	B
9.0		53.6	25.4	
9.5		56.5	6.7	
9.5	40	56.4	5.1	
8.8	42	56.2	39.3	
9.5	43	4.0	4.6	
9.2		11.6	52.7	
9.5		11.8	6.3	
9.5		37.5	10.0	
8.2		38.7	48.3	Lb
8.2		46.3	5.0	K
9.5		51.5	1.5	
7.2		54.4	33.8	K
9.2	44	37.3	10.9	B
9.5		59.4	57.1	
9.5	45	13.2	15.7	
9.0		18.3	23.7	
9.4	46	7.7	14.4	
9.3		29.0	10.8	B
9.5	47	40.3	40.4	?
8.5		41.5	30.6	R
8.3	48	6.4	44.9	K
9.5	49	5.0	15.7	
9.0		8.2	5.6	K
9.0		16.2	4.1	K
5.5		26.2	6.4	L
9.4		54.5	14.3	
8.7	50	26.3	34.4	K
7.7		59.8	38.9	K
9.5	51	14.0	25.0	
8.9		32.7	34.5	K
9.1		57.1	43.9	R
9.4	52	15.5	51.1	
9.5		17 3	29.6	
9.1		25.9	57.6	
9.5		33.9	49.0	
9.5	53	30.0	26.7	
9.3		31.8	18.1	K
8.0		35.8	14.7	K
9.5	54	17.9	26.8	
9.5		56.1	57.2	
9.2	55	30.2	11.0	
8.9		32.3	37.6	Kb
7.0		45.6	32.9	K
9.4	57	10.2	39.9	
9.5	58	3.4	11.3	
9.5		8.3	31.9	
9.1		24.4	47.9	a
9.0		29.0	46.3	
9.4		44.3	21.5	
9.1	59	3.0	52.8	b
7.3		48.9	20.2	K
9.4	0	8.6	24.3	
9.4		36.0	25.1	
9.2	1	48.5	18.7	Bb
9.5	2	5.9	50.8	B
9.5		22.4	32.5	
10pr.		32.67	2.96	

321 — 380

	2ˢ		+17°	
m	′	″	′	
9.5	2	24.0	45.5	
9.5		47.3	46.0	
9.5	3	5.5	43.9	
9.1		7.6	40.9	b
9.4	4	12.9	33.5	
9.5		16.9	47.3	B
9.0		36.5	20.2	B
9.5	6	53.3	5.5	
9.4	7	6.0	1.1	B
9.5		16.0	26.7	
9.1		10.6	47.9	b
8.8		25.5	14.3	K
9.5	8	7.2	53.0	
9.4		27.7	35.4	
9.4		48.4	42.0	
9.5	9	13.7	12.8	
8.8		16.5	7.1	K
9.0		34.7	15.3	
7.3		44.3	46.6	L
9.5	10	29.0	14.6	
9.5		36.7	36.0	
9.5	11	40.0	36.3	
9.5	12	15.3	40.9	
9.5		29.0	50.8	
9.4		38.7	52.5	
8.8	13	5.4	54.8	
9.5		13.7	39.5	
9.5		19.4	57.8	
9.5		25.3	16.3	
9.4	14	28.1	36.4	B
9.5		29.0	14.9	
9.5		30.2	52.3	B
8.5		36.8	44.4	
9.4		41.5	52.0	B
9.5		56.4	56.7	?
8.9	15	38.3	25.2	
8.9		52.0	32.6	
9.5		59.7	13.5	
9.4	16	37.6	14.2	Kb
9.5		40.3	33.0	
* 9.3		48.7	22.5	
9.4	17	18.7	15.9	
9.5		26.0	11.4	
9.1	18	1.3	19.8	Bb
9.5	19	7.0	44.0	
9.3		35.2	57.0	
9.1		45.8	51.0	b
8.9		57.3	25.3	K
9.4	20	15.7	38.5	
9.5		23.7	16.0	
9.5		30.0	55.0	B
9.4		39.5	9.0	
9.3		39.7	55.2	B
9.5	21	15.0	16.0	
9.5		27.7	46.1	
9.5		49.0	33.5	
9.5	22	13.7	50.5	
9.3		30.7	20.1	
9.4		46.5	52.3	
6.5		53.1	3.9	K
10pr.		33.06	2.78	

381 — 440

	2ˢ		+17°	
m	′	″	′	
9.3	23	28.3	2.1	
9.5		51.5	11.6	
8.3		59.0	44.0	K
8.9	24	28.9	50.7	K
9.5	25	1.3	4.6	
9.3		10.0	34.7	
9.5		20.0	20.5	
9.4		26.8	44.3	
9.5		28.9	49.4	
9.4		30.2	11.0	
9.3	26	28.7	36.8	
8.6		39.5	21.2	
9.4		53.0	27.4	
9.2		57.0	36.0	
8.4	27	1.9	25.3	K
9.5		2.0	36.4	
9.0		5.2	22.2	
9.5		20.9	0 0	
9.4		30.7	42.9	
9.4	28	5.9	53.2	
9.2		8.9	52.8	b
9.4		25.2	45.0	
8.9		44.9	17.6	K
9.5		48.9	52.5	
9.4	29	3.0	34.9	
9.5		13.8	2.4	
9.5		38.9	46.4	
9.5		39.4	47.9	
9.5		50.4	57.5	
9.4	30	14.7	44.5	
9.5	31	10.4	44.4	
9.3		32.3	45.2	
9.5	32	22.4	23.0	
7.8		28.2	58.4	K
9.5		41.8	52.8	
9.5		44.6	24.7	
9.4		56.6	3.5	
9.5	33	6.1	34.7	
7.8		58.3	8.1	K
9.3	34	30.9	6.3	
9.3		38.0	34.5	
9.2		50.4	15.0	K
9.2		59.7	26.7	
9.5	35	2.7	48.3	
9.5		31.5	55.1	b
6.5	36	14.4	8.8	Kb
9.5		19.7	37.5	
9.5		49.0	58.8	
9.4	37	3.0	8.6	B
9.2		12.0	10.1	B
9.5		20.4	51.3	
9.2		43.7	20.2	
9.1	38	14.1	36.2	K
9.5		16.7	31.9	
9.2		23.1	39.2	
9.5		36.8	37.1	
9.5	39	18.7	29.9	
8.8		28.0	56.2	
9.3		32.4	6.5	
8.9		48.2	0.4	
10pr.		33.30	2.64	

441 — 500

	2ˢ—3ˢ		+17°	
m	′	″	′	
8.9	40	18.1	34.7	
6.0		24.7	41.4	K
9.5	41	18.7	29.5	
9.5		53.8	43.9	
9.2	42	5.7	25.7	b
9.5	43	20.1	0.4	b
9.5		48.0	43.5	
9.5	44	28.7	28.5	
9.5		36.7	46.5	
9.5		47.8	2.4	
9.5	46	1.7	44.3	
9.5		1.7	46.9	
9.5		35.5	52.8	
7.0		48.9	8.8	K
8.9	47	7.7	16.4	K
9.5		28.8	27.1	
6.0		40.7	44.4	L
6.5	48	14.7	26.4	Kb
8.9	49	2.8	19.8	K
9.5		37.5	2.8	
7.3		46.4	13.6	K
9.5	50	4.7	20.1	
8.7		30.1	5.4	K
9.3		31.4	12.6	
9.1		34.1	44.2	K
9.0		46.7	36.1	
9.5	51	5.1	52.5	
9.5		43.4	9.4	
9.5		55.1	27.1	
9.5	52	16.2	56.8	
6.8		23.1	25.4	K
9.5		41.7	38.1	
9.5	53	1.8	57.2	
9.5		28.4	35.3	
9.2		30.7	20.8	K
9.5		45.1	44.4	
9.2	54	4.7	43.7	
9.0		8.2	51.9	
9.5		47.1	15.0	
9.5	55	5.7	36.1	
9.5		18.7	14.3	
9.5	56	4.2	55.6	
9.5		32.1	19.1	
9.5		38.8	4.2	
9.4		54.4	23.2	
9.5	57	4.7	46.9	
8.8		5.1	3.3	K
9.5		10.8	8.3	
8.8		38.2	36.5	K
9.3	58	0.7	36.5	
9.3		10.1	17.1	
9.1		19.7	2.3	K
6.7	59	17.4	18.6	K
9.5		24.0	18.2	
9.5		35.7	36.5	
9.5		40.0	3.1	
9.5		40.6	32.0	
9.3		45.7	52.5	
9.0		52.0	44.1	K
* 9.1	0	36.8	11.5	
10pr.		33.60	2.44	

360 a			
9.5	16	44.1	15.2

499 a			
9.5	0	31.7	2.9

m	501—560 3ʰ	+17°		m	561—620 3ʰ	+17°		m	621—680 3ʰ	+17°		m	681—740 3ʰ–4ʰ	+17°		m	741—800 4ʰ	+17°	
	′ ″	′			′ ″	′			′ ″	′			′ ″	′			′	′	
9.5	0 37.9	27.9		9.5	21 44.5	6.1		9.4	37 40.4	56.6		9.4	57 52.8	42.5	B	9.3	22 54.1	14.3	
9.5	51.9	25.0		9.3	22 8.6	0.4		9.5	50.4	5.7		8.5	58 25.0	15.1	K	9.5	23 1.9	57.2	
9.5	1 21.4	12.4		9.1	23 1.9	2.0		9.2	38 8.8	27.8	*b*	9.5	28.3	51.1		9.5	8.7	26.7	
8.6	32.4	6.3	B	6.5	7.7	26.8	K	9.5	33.6	35.6		9.3	0 20.7	56.0		9.5	13.8	23.0	
8.5	55.4	47.5	K	8.5	11.4	18.2	K	8.8	37.0	49.5		9.5	26.7	3.0	B	9.3	57.7	54.1	B
9.4	2 28.6	20.0		9.5	23.2	23.0		9.5	39 8.1	50.6		9.1	1 13.2	6.3	K	9.5	24 8.8	8.0	B
9.5	48.8	52.3		9.3	24 11.4	11.6		9.5	15.8	12.1		9.3	22.3	34.7		9.0	16.5	32.1	R
9.5	4 2.6	35.5		8.8	12.3	7.3		9.5	41.0	21.1		9.4	40.5	25.0		9.5	36.8	25.5	
9.1	38.6	43.0		9.5	12.7	33.3		9.5	55.8	6.9		9.0	44.0	43.1	K*b*	9.5	51.5	56.8	
9.5	43.3	43.6		9.5	14.7	49.2		9.5	40 14.8	23.2		9.5	2 17.0	4.3	B	6.5	25 9.7	41.7	K
8.7	56.7	30.8		9.4	28.8	10.1		9.3	41 3.3	16.4		9.4	21.1	3.9	B	8.0	26 19.3	26.3	L
9.5	5 4.3	2.1		9.2	49.2	51.8	*R*	8.8	3.6	21.6		9.3	50.9	59.6	*R*	9.2	25.4	8.5	
8.8	47.9	20.6	K	8.3	25 34.2	45.4	K	9.5	8.0	1.0		9.3	3 1.4	14.0	*R*	9.2	55.0	57.1	
8.5	53.7	45.8	K	9.5	45.6	3.8		9.5	16.9	58.6		8.5	4 16.8	27.1	K*b*	9.5	56.8	28.3	
9.0	6 3.2	47.2	K	7.0	53.9	21.6	K	9.0	18.6	50.4		9.5	46.6	44.4		9.5	27 14.8	19.6	
9.4	8.1	54.5		9.5	56.3	58.0		9.5	25.0	6.1		9.5	5 38.5	50.9		9.5	28 7.8	35.5	
8.8	33.6	29.6	*B*	9.5	26 1.3	43.8		9.2	36.3	49.2		9.5	6 3.9	0.1		9.5	54.5	59.8	
9.3	34.6	47.9		9.5	14.1	12.8	B	8.1	42 6.8	2.0	K	9.5	29.5	57.4		9.5	30 16.1	20.7	
9.4	40.9	38.6		9.3	43.3	13.4	B	9.5	12.0	4.8	*b*	9.5	7 38.0	19.3	*b*	7.9	17.5	6.3	K
9.2	7 5.5	21.5		9.5	55.7	29.8		8.9	20.1	20.1	K	9.5	8 47.3	35.0		9.3	42.8	47.6	*b*
9.5	8.6	24.9		9.5	27 8.3	23.9		9.0	43 45.7	40.9		9.4	53.6	4.5		9.4	46.8	35.8	
9.5	9.5	2.8		9.3	33.4	45.2		9.5	44 18.3	1.3		8.9	9 33.8	2.2	R*b*	8.2	31 30.2	10.6	K
9.0	30.9	57.2		9.5	42.3	58.8		9.5	30.2	50.6		7.7	38.1	53.2	K	9.3	41.7	19.6	K
9.4	45.5	39.7		8.3	28 2.6	20.2	K	9.2	36.9	41.8		9.5	10 0.9	3.6		9.5	51.0	35.3	
7.8	9 1.3	1.8	K	8.5	6.8	53.1	K	9.0	40.6	34.7		8.7	17.3	27.5	K	8.7	32 1.2	49.8	
9.5	18.1	29.0		9.5	31.0	17.0		9.5	49.2	6.0		9.2	18.6	29.2	K	8.9	9.0	5.5	
7.5	10 8.7	37.4	K	8.0	46.4	52.4	K	9.5	45 9.7	26.6	B	8.6	46.4	9.8	K	9.5	36.0	48.9	
9.1	12.6	32.7		9.3	48.9	17.1		9.4	17.0	34.8		9.5	11 53.2	49.6		8.4	33 10.9	7.6	K
8.5	27.5	55.8	K	9.3	50.7	22.8		9.5	36.8	52.5		8.0	13 1.1	54.6	K	9.5	23.9	37.7	
9.5	59.9	37.2		9.5	51.7	49.1		9.3	46 4.7	19.2		8.8	7.3	13.7	B	9.3	34 6.6	36.0	B
9.5	11 4.5	58.2		8.5	29 0.9	25.1	K	9.5	14.3	35.9	B	9.5	42.3	34.8		9.4	12.7	49.2	B
9.3	21.1	6.8		8.5	7.3	42.3		9.5	21.4	50.4		3.7	14 34.7	12.2	K	9.3	18.0	35.9	B*b*
9.5	57.6	44.8		9.0	47.5	58.5		9.0	31.6	10.5	B	9.4	15 41.8	12.8	B	9.4	26.8	52.3	
9.3	12 33.4	8.1		9.5	48.2	43.2		8.8	35.4	55.4		4.8	44.5	7.3	K*b*	8.3	36.9	2.2	L
9.5	40.9	5.7		8.3	30 12.5	7.5		9.5	42.3	9.2		9.5	53.0	40.8		9.4	57.9	44.4	
9.5	55.6	9.0		9.5	16.6	27.9		8.0	47 9.7	11.2	K	9.3	16 1.2	7.0	K	9.5	58.8	48.6	
9.5	13 19.0	5.3		9.5	59.4	11.3		9.5	54.7	30.9		9.4	19.1	18.6	B	9.5	35 19.2	23.3	
9.2	35.5	59.3		9.0	31 7.2	24.4		9.5	48 25.8	15.7		9.5	20.7	39.2		9.0	35.5	41.1	
9.3	58.8	12.9		9.5	7.3	55.7		9.5	49 9.8	47.8		4.7	17 7.2	35.6	K*b*	9.5	44.8	1.3	
9.5	14 17.9	59.5	*b*	9.5	12.7	35.4		9.1	54.5	52.4	*b*	9.5	17.3	39.7		9.4	55.4	17.1	B
9.0	21.0	11.3		8.3	13.7	55.4	K*b*	9.3	51 30.2	16.8		9.3	23.3	40.7		9.3	38 1.4	5.9	*b*
9.5	29.7	27.8		8.9	31.3	38.1		9.5	52 12.7	22.0		8.0	33.5	6.0	K	9.0	24.2	28.1	
9.5	15 1.2	0.2		9.3	35.7	31.1		9.5	14.4	18.8		9.5	58.3	56.2		9.5	31.9	35.0	
9.5	42.8	46.5		9.5	57.4	28.1		9.5	17.4	46.8		6.9	18 41.8	52.3	K	9.5	52.2	49.8	
8.2	16 2.8	2.0	K	9.5	32 10.3	11.3		9.4	21.1	28.1		9.5	50.5	30.4		9.5	53.1	45.3	
9.5	10.6	13.8		8.8	26.6	38.2		6.0	27.7	47.2	K	9.5	19 15.0	43.7		8.3	39 11.2	59.6	K
9.5	32.2	55.0		9.5	38.5	5.3		9.5	28.7	21.1		9.5	22.5	24.4		9.2	24.8	38.7	B
9.3	47.6	41.4	*R*	9.2	33 30.2	31.3		9.5	32.0	10.7		9.4	20 15.0	36.1		9.5	40. 2.7	42.2	
9.3	17 0.7	36.1		9.5	39.3	7.8		9.5	53 26.7	53.4		9.5	51.8	47.3		7.3	11.5	33.0	K
8.3	10.3	13.4	L*b*	9.5	45.7	44.4		9.5	40.8	30.3		9.2	57.8	40.8		9.3	41 50.1	52.6	
9.3	10.7	41.4		9.3	48.2	36.5		9.5	54 8.4	39.5		7.3	58.8	12.9	K	9.0	55.5	15.8	K*b*
8.8	15.6	20.0		9.2	56.2	52.7	*b*	9.5	23.8	44.2		7.0	21 8.5	33.0	K	9.5	42 26.8	29.1	
9.5	57.6	13.7		9.5	34 6.2	14.6		9.5	55 6.4	50.7		9.5	8.8	10.1		9.2	53.8	6.8	
9.6	18 55.9	2.3		8.5	8.1	24.8		9.5	35.8	58.0		9.3	10.3	33.5	K	9.5	43 1.8	54.5	
9.1	58.7	41.4	*b*	9.4	22.7	27.9		9.5	56 11.2	43.0		8.5	25.5	22.0	K	9.4	15.8	39.5	
9.5	19 6.8	52.1		9.3	35 55.5	20.8		6.5	22.6	6.8	K	9.5	38.7	54.1		9.4	16.4	*11.6*	*a*
9.5	36.2	44.5		9.0	36 18.6	17.8	K	9.4	55.0	44.0		9.5	22 0.8	27.8		9.0	26.3	27.0	K
9.4	54.1	58.6		9.5	37 2.4	4.7		9.2	57 0.7	16.3	K	8.8	14.9	4.7	K	9.5	28.8	46.6	
9.5	21 4.7	17.1		9.5	23.2	49.3		9.2	16.4	32.3		9.5	21.3	19.3		9.5	*32.4*	*23.0*	R*b*
9.5	6.9	1.7		9.5	24.1	19.9		9.2	43.1	40.6	*b*	9.5	26.1	1.6		*var*	38.0	16.5	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	*33.84*	*2.25*		*10pr.*	*34.05*	*2.04*		*10pr.*	*34.22*	*1.85*		*10pr.*	*34.49*	*1.50*		*10pr.*	*34.65*	*1.22*	

501 α = 16.394
9.6 | 0 48.7 | 6.1 | B

801 — 860

	4ᵘ—5ᵘ	+17°	
m	′ ″	′	
9.5	43 53.5	25.5	
9.0	44 14.2	5.7	K
9.5	27.5	39.0	
9.5	35.0	2.1	
9.5	45 38.8	10.4	
9.5	49.7	59.2	
9.3	55.9	22.2	R
9.0	46 45.9	57.3	
9.5	47 12.4	22.8	
9.5	18.5	52.2	
9.5	19.9	31.4	
9.5	45.1	31.8	
9.5	48 0.1	14.7	
9.2	4.7	47.0	K
9.0	43.8	14.8	
9.0	49 11.0	9.7	K
9.5	25.8	35.5	
9.5	50 2.4	33.9	
9.5	17.7	55.9	
8.9	19.9	45.8	K
9.4	51 1.7	15.4	
9.5	25.7	58.3	
9.5	52 35.2	18.9	b
9.5	54 26.0	5.4	
9.2	51.5	5.4	
9.5	55 0.5	5.3	
9.1	37.0	16.6	b
9.5	37.3	25.6	
9.4	54.4	41.3	
9.5	56 9.7	29.7	
9.5	16.1	47.2	
8.8	27.0	34.1	
9.5	52.5	2.8	
9.5	58.5	17.1	
9.5	57 0.5	59.4	
9.3	2.0	39.0	
9.0	23.6	10.4	K
8.9	35.1	58.9	B
9.5	50.3	42.5	B
9.5	50.9	51.6	
8.8	51.9	36.5	K
9.4	58 0.5	37.8	
9.4	9.5	40.2	B
9.3	9.6	38.9	
9.3	16.2	32.0	K
9.5	59 5.7	20.3	
9.5	10.5	59.8	
9.3	19.7	25.8	
9.5	23.4	40.0	
9.5	26.6	10.5	
9.3	35.2	5.0	
9.5	0 6.5	47.3	
9.3	43.3	5.5	K
9.2	44.5	19.5	
9.3	57.2	41.4	a
9.5	1 1.0	4.7	
9.2	5.0	43.1	K
9.3	7.9	37.2	
9.5	17.4	6.5	
9.5	38.2	38.7	
10pr.	+ 34.77	+ 0.92	

861 — 920

	5ᵘ	+17°	
m	′ ″	′	
9.5	1 52.9	13.0	
8.2	2 15.5	14.7	K
9.5	27.7	31.6	
9.2	40.5	12.6	K
9.4	3 2.9	57.7	
9.5	38.5	37.1	
8.7	47.7	5.1	K
9.5	54.5	52.8	
8.7	4 5.5	2.0	K
9.5	8.0	12.4	
9.5	16.5	18.2	
8.7	24.1	58.7	Kb
9.5	35.3	12.3	
9.3	5 25.4	8.8	
9.2	29.0	16.4	K
9.6	33.2	35.9	
9.5	39.0	47.5	
9.4	43.2	41.3	
9.4	6 39.1	54.6	
9.4	45.2	0.7	
9 5	55.9	44.1	
9.0	7 26.4	7.2	
9.4	8 12.9	54.6	
9.4	25.0	23.3	
9.5	36.5	28.2	
9.0	9 6.2	30.7	
9.5	12.1	23.9	
9.0	14.2	12.6	K
9.5	33.0	39.0	
8.9	10 5.5	50.1	
9.5	25.2	46.9	
9.3	30.5	52.5	
9.5	30.7	38.5	
9.3	11 1.5	24.4	
9.5	17.3	5.3	
9.5	22.9	36.2	
9.5	23.7	25.8	
9.5	50.4	4.6	
8.9	53.0	50.1	L
9.1	12 0.5	14.3	
8.0	19.7	6.1	K
9.2	27.7	6.4	K
9.5	55.5	47.3	
9.5	13 5.6	57.4	
9.5	9.5	51.2	
9.5	30.5	6.5	
9.3	35.4	12.7	
9.5	44.2	14.0	
9.5	45.6	35.4	
9.5	52.1	33.5	
9.3	54.1	14.3	
9.5	14 4.4	35.1	
9.3	12.0	35.0	
9.5	12.8	42.1	
9.5	25.8	2.0	
9.2	27.9	29.7	b
8.4	15 10.3	11.2	K
9.5	29.9	29.9	
9.0	52.7	14.7	K
5.5	57.3	15.1	K
10pr.	+ 34.84	+ 0.72	

921 — 980

	5ᵘ	+17°	
m	′ ″	′	
9.5	16 2.2	29.9	
9.2	16.0	55.7	K
8.2	26.3	3.9	K
9.1	52.4	53.4	
9.5	17 15.0	25.1	
9.5	18 5.7	36.9	
9.3	41.4	59.0	
6.0	42.5	50.4	L
9.0	57.6	8.4	K
9.5	19 18.2	35.8	
6.5	36.7	7.3	K
9.4	55.3	57.4	
9.5	20 12.5	3.6	
9.4	14.2	12.9	
9.3	43.9	46.7	
9.5	48.2	34.6	
9.5	21 32.2	42.2	
9.2	22 29.2	15.4	
9.5	40.1	32.0	
9.4	46.8	11.4	
9.5	48.2	2.5	
9.2	23 10.4	0.1	R
8.5	11.0	12.2	
9.4	17.9	43.6	
8.2	37.2	25.7	K
8.4	50.7	38.2	K
9.5	24 14.0	0.2	
9.5	27.2	47.8	
9.4	44.7	49.7	
8.9	52.6	22.5	
9.4	25 8.2	15.3	
9.5	26 9.2	7.4	
9.0	10.1	2.3	
9.5	37.6	16.5	
9.4	41.2	37.8	
9.5	27 4.7	37.8	
9.5	47.6	36.0	
9.5	28 25.0	10.4	
9.4	34.1	25.4	
9.5	34.7	59.5	
9.1	43.6	13.6	b
9.5	43.6	21.1	
9.5	46.9	55.5	
9.5	29 19.4	52.5	
9.3	20.2	36.1	
9.5	48.7	16.6	
9.2	54.8	10.2	Kb
9.4	30 7.1	40.9	
9.2	19.6	39.6	
9.5	48.3	4.0	
9.0	53.2	37.5	K
9.1	55.8	40.1	K
9.5	31 33.4	42.0	
8.7	37.4	35.5	K
9.3	48.9	16.8	R
9.3	32 5.4	20.7	
8.8	22.4	6.7	K
8.6	23.9	14.8	K
8.0	56.4	26.9	K
9.0	58.6	21.6	K
10pr.	+ 34.89	+ 0.51	

981 — 1040

	5ᵘ	+17°	
m	′ ″	′	
9.5	32 59.0	12.1	
9.3	33 11.9	0.9	
9.3	16.6	22.4	
9.0	54.8	59.9	
8.6	34 22.4	18.2	K
9.3	45.2	25.8	
9.4	59.3	12.7	
9.3	35 0.5	46.1	
9.5	4.8	21.5	
9.1	17.4	50.4	
9.5	52.3	0.3	
9.5	36 11.7	10.2	
9.5	37 12.5	42.1	
9.5	13.2	32.2	
9.4	20.9	56.8	
9.5	21.1	48.2	
9.2	32.7	22.0	
9.2	40.8	12.4	
9.5	42.8	59.9	
9.5	38 18.3	8.4	
9.5	31.9	46.9	
9.3	35.8	39.4	R
9.5	38.7	5.0	
6.1	59.0	40.5	K
9.2	39 4.8	33.3	
9.5	11.2	40.0	a
9.1	11.8	54.2	
9.5	13.9	7.9	
9.5	24.0	5.3	
9.0	25.0	44.4	K
8.7	45.6	26.6	K
9.5	59.1	44.6	
7.8	40 2.6	22.5	L
9.5	13.5	6.0	
9.2	22.8	25.1	
9.5	42.3	57.6	
9.5	43.7	54.0	
9.0	46.0	41.5	K
8.8	41 2.5	27.8	R
9.4	3.0	26.5	
9.5	14.2	31.3	
9.4	16.7	29.8	
9.5	17.7	13.5	
9.5	18.6	4.7	
9.5	45.7	21.5	
9.5	46.3	27.7	
9.3	49.2	23.9	
9.5	51.8	0.4	
7.8	42 4.5	59.0	L
9.2	19.7	20.0	
8.4	39.4	47.9	L
9.1	39.7	50.9	a
9.5	50.0	39.6	
8.9	50.4	17.6	
9.4	59.9	5.7	
9.5	43 41.1	13.9	
9.5	44.0	7.5	
9.4	44 5.5	39.1	
9.4	6.0	49.6	
9.4	25.4	2.5	
10pr.	+ 34.92	+ 0.30	

1041 — 1100

	5ᵘ	+17°	
m	′ ″	′	
9.5	44 55.6	55.8	
9.4	45 4.0	49.5	
9.4	6.8	40.6	
9.5	12.1	22.6	
9.5	38.3	6.8	
9.5	45.3	45.3	
9.4	53.3	25.1	
9.5	54.2	11.2	
9.5	46 10.3	4.5	
9.5	26.4	51.1	
7.7	32.2	22.2	L
9.2	44.5	27.6	
9.5	55.9	17.5	
9.2	57.4	13.1	
9.5	47 0.8	51.5	
9.5	17.7	56.0	
8.5	41.4	57.8	K
9.1	42.9	24.9	b
9.3	45.0	35.2	
9.3	45.9	42.3	
8.9	46.0	46.0	
9.4	49.3	48.1	
9.5	48 2.6	37.7	
9.5	9.0	9.6	
9.5	13.0	2.8	
9.5	38.5	38.7	
9.5	43.1	37.8	
9.5	45.8	45.5	
9.0	48.6	7.4	
9.1	49 5.6	21.8	
9.0	6.7	33.0	
9.5	8.5	44.4	
9.5	15.2	16.3	
9.4	18.0	33.6	a
9.4	31.4	50.4	
9.3	33.6	20.4	
9.5	36.3	2.4	
9.3	55.4	57.2	
9.5	50 18.7	44.4	
9.3	29.8	5.8	
9.5	39.3	49.7	
8.1	56.2	48.0	B
9.5	51 14.2	20.4	
8.9	47.5	38.0	
8.9	51.4	6.0	
9.5	52.3	38.4	
9.5	52 11.6	4.6	
9.5	17.2	7.4	
8.3	27.6	52.9	Kb
9.5	42.6	16.4	
9.2	56.7	25.8	
9.2	53 .8.6	28.6	
9.5	13.4	38.9	
9.5	16.1	33.8	
8.4	22.6	25.3	
9.3	34.6	53.5	
9.5	54 10.0	4.5	
9.5	16.4	23.3	
9.5	21.8	50.7	
9.5	22.8	3.9	a
10pr.	+ 34.93	+ 0.16	

m	1101—1160 5ʰ—6ʰ	+17°		m	1161—1220 6ʰ	+17°		m	1221—1280 6ʰ	+17°		m	1281—1340 6ʰ	+17°		m	1341—1400 6ʰ	+17°	
8.3	54 29.8	39.5	K	8.7	3 39.2	46.8	K	9.5	13 53.4	39.5		8.0	23 17.1	10.8	K	9.1	31 30.8	42.8	a
9.5	45.0	12.4		9.4	56.1	41.2		8.7	53.8	12.9	Lb	9.2	26.0	46.2	a	9.0	34.7	45.2	
8.9	52.4	3.3		9.5	58.2	56.1		8.4	14 20.5	52.4		9.3	26.9	10.7		9.5	37.7	29.2	
9.3	56.0	11.3		9.4	4 1.6	28.0		7.0	22.6	38.2	L	8.5	35.5	46.1	L	9.5	56.8	33.1	
9.5	56.4	28.2		9.4	3.3	49.0		8.4	54.6	27.3	L	9.5	38.4	57.0		9.5	32 8.2	12.0	
9.1	57.8	24.6		9.5	10.3	11.1		8.5	15 6.5	42.8	K	6.5	51.2	52.9	L	8.2	9.8	46.4	K
9.4	55 14.7	0.4		9.4	14.6	32.3		8.9	7.6	7.5		8.5	24 3.5	44.7	L	9.5	11.1	39.1	
9.5	17.3	19.5		9.5	26.0	28.0		9.1	14.9	58.4	a	8.0	17.1	8.1	K	9.5	23.1	33.9	
7.3	24.5	7.2	K	9.1	28.1	23.9		8.4	20.9	57.4	K	9.5	38.7	57.5		9.5	39.2	8.6	
9.5	28.4	16.8		8.9	35.8	4.5		9.3	22.7	22.2		9.5	38.8	11.4		9.3	53.4	40.5	
9.5	34.7	46.9		9.3	44.4	49.7		9.4	27.6	21.6		8.2	42.2	3.1	K	9.5	33 8.3	17.7	
8.9	47.0	17.1		9.3	59.5	22.7		8.8	29.3	6.5	K	9.5	46.2	10.0		8.3	12.6	51.9	K
8.8	56 15.6	47.3	K	9.3	59.5	39.8		9.4	43.5	55.8		9.2	47.7	25.1		9.5	13.2	43.2	
9.0	25.2	38.2		9.5	5 2.8	47.3		9.0	16 32.7	51.2		8.9	51.4	30.9		9.5	39.2	21.7	
9.4	38.9	55.3		9.2	5.1	11.7	R	7.4	41.0	4.2	Kb	9.2	25 2.0	0.2		9.3	41.4	25.3	
9.3	43.2	32.6		9.4	15.7	13.8		9.5	48.3	5.2		9.5	12.9	9.5		9.5	58.3	21.3	
9.5	49.3	40.8		8.8	30.4	34.0		8.9	17 9.0	52.8	R	9.5	41.5	8.3		5.5	59.0	46.8	Kb
9.4	51.1	41.3		9.0	30.5	12.8		9.2	12.4	22.5		9.1	52.2	19.9	K	9.5	34 19.2	7.3	
9.5	57 17.5	44.4		9.3	38.0	26.2	a	9.5	22.7	17.3		9.4	26 5.1	29.2		9.5	34.9	12.0	
9.5	19.7	59.9		9.0	43.7	19.9		9.4	32.2	22.1		9.4	16.2	10.0		8.5	39.4	59.2	K
9.6	36.5	39.4		*8.8	45.8	7.9	K	8.6	34.5	15.8		9.3	29.1	22.1		9.3	47.7	4.1	
9.5	41.5	11.5		*6.5	6 0.9	56.7	K	9.5	35.0	22.3		9.1	29.4	7.3		8.8	48.1	8.1	K
9.5	49.7	4.5		8.7	9.7	27.7	K	9.1	18 4.4	47.0		9.5	27 0.7	5.5		9.3	53.3	5.6	
9.5	52.7	49.8		9.2	12.3	28.6	a	8.8	7.3	54.2		8.8	20.0	9.1		9.2	56.2	13.3	B
9.6	53.5	16.5		9.3	50.2	56.2		9.5	21.7	5.3		9.3	23.3	26.2		9.5	35 10.5	58.0	
9.4	58 14.3	39.1		9.3	51.7	41.6		9.5	26.5	47.1		7.7	27.0	47.1	R	9.5	10.8	54.7	
9.5	21.5	16.9		9.0	7 0.4	47.6	L	8.2	29.7	31.7	K	8.0	27.1	19.1	B	9.4	19.5	12.2	B
9.5	40.6	30.8		9.1	41.2	42.5		9.2	33.6	52.3		8.9	30.7	58.5		9.4	24.2	59.6	
9.0	47.9	29.7		8.9	55.1	58.6		9.4	49.4	0.5	b	9.0	34.4	35.9		9.4	38.3	21.2	
9.5	57.9	34.8		9.5	55.3	22.5		9.3	57.1	55.7	R	9.4	36.2	58.6		8.6	50.4	41.8	K
9.5	59 2.1	44.1		6.5	58.4	13.2	L	9.5	19 0.5	35.3		9.2	42.4	49.5		9.5	55.3	44.6	
9.1	18.1	32.4		9.3	8 2.7	32.5		9.0	9.4	26.0	K	9.1	56.1	32.8		9.3	36 3.8	21.3	
9.4	19.0	45.6		9.5	14.4	44.0		9.5	15.3	2.2		9.2	28 0.0	14.8		9.2	4.7	19.6	K
9.5	24.6	39.7		9.4	24.0	30.3		9.0	25.6	46.5	K	9.5	14.2	23.3		9.4	9.6	0.3	
8.9	50.4	52.5	K	9.0	27.0	28.9	L	9.5	33.0	21.0		9.2	15.5	30.2		9.5	10.6	6.2	
9.0	0 0.0	26.6		9.5	43.1	52.5		9.4	44.4	20.3		9.5	26.3	24.8		9.5	15.3	17.2	
9.5	0.3	6.0		9.5	48.6	52.9		9.5	53.7	5.4		8.5	28.7	12.6	K	9.5	19.8	11.9	
9.5	12.0	51.4		9.5	9 5.6	48.2		9.5	20 24.8	35.1		9.5	33.5	40.1		*9.0	32.6	52.2	
8.6	18.3	25.4	K	8.7	30.1	41.1	L	9.5	26.0	51.7		9.4	46.5	35.3		9.0	34.7	4.5	K
9.3	23.0	14.7		8.5	41.1	10.1	K	7.5	38.1	50.1	L	9.5	51.7	40.2		9.5	56.8	2.4	
9.5	32.5	32.4		9.5	57.2	19.1		8.0	43.3	35.2	B	9.5	29 5.4	5.1		9.4	59.0	57.9	
9.4	53.1	12.3		9.5	57.3	30.0		9.5	21 5.7	27.5		9.4	8.4	1.7		9.4	37 6.4	58.7	
8.5	58.9	12.0	K	6.5	10 36.3	22.5	K	9.2	13.1	9.5		9.1	17.0	42.5		9.1	11.9	58.9	R
8.4	58.9	51.6	K	9.3	53.0	27.3		8.2	13.3	4.0	B	9.5	20.0	48.6		9.5	20.5	49.7	
8.5	1 31.0	58.0		9.4	57.4	0.5		9.5	13.4	32.8		*9.2	31.3	39.0		9.2	23.0	40.0	
9.5	31.1	37.2		9.5	11 15.0	42.1		9.5	22.7	48.0		8.9	32.4	12.2		9.4	30.0	10.8	
8.3	41.1	43.8	K	9.5	22.9	44.5		8.0	23.3	42.5	L	9.0	35.6	54.6		9.4	31.1	7.5	
9.2	43.8	47.8		9.5	56.5	41.3		7.1	33.6	59.6	K	9.5	36.1	51.1		9.5	44.7	31.7	
9.5	43.9	51.3		9.2	58.5	31.4		9.3	37.8	50.7	R	9.5	30 6.3	1.3		9.5	48.3	5.2	
9.5	2 1.5	27.6		9.1	12 14.6	26.9	K	9.4	58.3	4.8		9.5	10.0	5.8		9.2	59.4	32.7	
8.2	4.2	43.2	K	8.8	23.9	24.9	K	9.5	22 9.9	56.8		9.2	23.0	39.2		9.1	38 7.8	30.2	b
9.3	32.0	43.2		9.2	34.2	14.3		9.5	15.7	20.6		9.5	23.1	4.5		7.5	42.7	16.1	L
8.7	38.5	17.2		9.5	43.3	39.7		9.5	27.6	16.7		8.6	33.4	54.2	K	8.0	50.6	4.8	B
7.3	3 12.9	24.3	K	6.5	58.2	49.9	K	9.5	33.4	24.4		9.5	38.6	7.5		*9.5	52.8	0.9	
9.2	15.4	24.8	K	9.4	13 1.1	8.5		6.3	46.1	2.2	K	9.5	53.0	22.1		*8.0	58.1	7.0	B
9.5	24.1	2.0		*9.2	2.0	22.1	K	9.5	48.0	40.6		9.1	56.3	46.6	K	9.4	39 11.0	42.8	
9.5	25.5	51.2		*9.4	4.5	6.0		7.5	57.3	30.8	K	9.3	59.5	55.0	a	9.5	37.5	19.8	
8.2	30.9	47.7	K	9.3	25.2	42.2		9.2	58.8	5.3		8.4	31 8.7	49.0	Kb	9.5	41.3	48.2	
9.5	31.2	43.9		9.2	43.3	53.4		9.0	23 10.3	41.7		8.7	9.2	36.7	L	9.2	47.6	7.2	
9.4	35.0	42.6		9.5	53.3	59.1		9.0	13.0	14.2	K	9.5	28.9	56.3	a	9.5	40 18.8	2.5	
10pr.	+ 34.94	+ 0.01		10pr.	+ 34.93	— 0.13		10pr.	+ 34.92	— 0.28		10pr.	+ 34.90	— 0.41		10pr.	+ 34.88	— 0.52	

1181ᵉ								1324ᵉ								1377ᵉ			
9.5	5	52.6	27.9					9.5	29	28.4	52.0					9.6	36	28.9	19.9	B
1216ᵉ																1394ᵉ			
9.5	13	4.4	24.1													9.5	38	58.0	8.7	

6ᵐ—7ᵐ +17°

1401 — 1460

	6ᵐ		+17°	
m	°	′ ″	′	
9.3	40	24.1	13.4	a
9.3		25 0	49.9	
9.2		25.8	32.9	a
9.0		37.0	34.7	
9.5		38.2	45.1	
8.8		43.7	14.8	
9.4	41	35.5	13.1	
9.5		40.0	10.5	
8.3		40.2	45.1	K
9.5		43.4	6.3	
9.5		50.1	32.9	
9.5		56.8	28.8	
9.5	42	7.2	27.4	
9.5		19.3	19.9	
9.5		20.7	7.0	
9.5		30.4	35.4	
9.5		45.5	17.0	
9.3		57.9	14.4	
9.5	43	2.6	8.4	
8.7		12.1	5.2	L
9.4		15.6	5.5	
8.3		20.2	50.2	B
9.2		21.4	2.0	
9.5		30.1	16.3	
9.5		36.9	43.8	
9.5		53.1	7.4	
9.5	44	3.9	19.8	
9.5		11.4	50.8	
9.4		54.3	20.2	
9.5		56.2	21.5	
9.5	45	13.5	2.2	
9.5		25.4	9.9	
9.4		30.0	2.0	
9.5		35.8	8.0	
9.2		36.7	48.0	Kb
9.5		40.5	57.5	
9.5		44.0	12.2	
9.5		45.5	11.7	
9.5		51.7	42.3	
9.5		54.0	10.7	
8.4	46	13.7	51.7	K
8.6		28.6	8.9	
9.5		39.2	28.2	
9.5	47	7.5	1.9	
9.5		21.7	21.2	
9.5		32.2	36.1	
7.0		51.0	55.8	K
9.5	48	2.7	15.4	
9.1		27.2	27.5	b
9.5		34.8	48.6	
9.5		52.6	29.1	
9.5		53.1	22.6	
9.4		54.9	1.9	
9.4		56.7	35.1	
9.5	49	27.5	38.2	
9.5		36.2	18.8	
9.4		42.4	56.9	
9.5		51.4	48.1	
9.3	50	7.3	5.3	
9.2		8.6	58.4	B
10pr.		+ 34.85	— 0.65	

1461 — 1520

	6ᵐ—7ᵐ		+17°	
m	°	′ ″	′	
8.8	50	13.4	39.6	B
9.5		44.2	27.4	
9.5		55.8	58.6	
8.5		58.0	42.8	K
9.0		58.7	21.6	
9.5		59.0	50.8	
*9.3	51	40.1	46.4	
9.5	52	5.8	57.2	
7.8		16.8	9 5	L
9.5		21.2	39.3	
9.5		31.7	48.6	
9.3		40.6	35.5	
9.0		56.1	59.5	
9.3	53	12.0	13.3	
9.5		29.2	23.2	
9.5		40.7	13.9	
9.1		52.0	9.1	b
9.0		53.0	49.6	K
6.0		59.1	57.1	K
9.5	54	7.3	57.9	
9.5		38.8	11.1	
9.5		53.6	59.3	
9.4	55	2.5	4.1	
9.5		30.9	4.7	
9.5		38.0	54.7	
9.4		48.0	2.3	
8.8		49.0	55.5	
9.0	56	11.9	15.6	
9.5		27.4	54.3	
9.5		56.2	33.3	
9.0	57	28.0	39.4	Kb
7.1		52.2	57.5	K
9 3	58	18.2	38.4	
9.3		19.0	34.5	
8.5		48.4	4.2	K
9.5		54.0	12.5	
9.0	59	7.0	48.2	K
9.0		15.7	14.6	
9.0		20.0	15.1	
9.5		26.7	53.9	
9.4		30.3	6.6	a
9.0		43.1	4.7	
8.5		48.7	33.4	K
8.2	0	13.8	34.8	K
7.3		18.7	53.8	L
7.9		23.8	8.4	K
9.5		29.8	23.7	
9.0		31.7	10.8	
8.9	1	3.1	53.8	
9.3		39.8	1.7	Kb
9.5		51.3	16.7	
9.3	2	15.6	35.7	
9.0		17.7	42.7	
9.5		36.4	4.2	
9.4		56.5	41.1	
9.0	3	8.0	38.5	K
9.1		19.6	18.8	
7.0		24.0	13.0	K
9.5	4	1.7	22.2	
9.4		5.7	1.0	
10pr.		+ 34.80	— 0.83	

1521 — 1580

	7ᵐ		+17°	
m	°	′ ″	′	
9.4	4	22.7	2.4	
9.2		25.0	15.2	K
9.5		28.0	23.0	
9.3		47.1	41.3	
9.0		49.5	10.1	K
9.5	5	16.6	49.3	
9.3		29.1	5.6	
9.5	6	33.6	4.4	B
9.0		41.1	42.7	K
9.1		55.3	11.1	K
9.5	8	3.6	56.2	
9.2		34.7	57.6	K
9.0		36.5	34.7	
8.8		48.0	55.5	K
9.2	9	3.7	46.0	K
9.1		7.0	39.6	K
9.4		44.3	50.5	
8.5		59.1	14.6	K
9.1	10	5.3	55.3	
9.0		27.7	31.6	K
9.4		49.5	9.4	
8.7	11	11.4	45.1	K
9.2		30.2	33.3	K
9.5		36.5	39.6	
9.1		45.7	47.5	K
9.1		49 7	1.2	
9.2		54.8	28.1	
9.5		59.4	53.1	
8.7	12	12.3	41.3	K
9.5		30.2	57.5	
9.4		32.8	27.4	
9.4		39.2	14.3	
9.3	13	0.0	42.4	
9.5		7.5	46.5	
9.5		8.2	8 0	
9.5		38.0	54.8	
8.6		49.8	1.6	K
9.3		55.7	35.5	
9.4	14	1.0	7.0	
9.5		12.8	39.6	
7.7		43.2	41.3	L
9.1		56.5	21.6	b
9.5	15	9.8	7.0	
9.5		12.0	13.9	
9.5		20.5	34.0	
9.5	16	14.9	55.2	
9.5		35.2	16.3	
9.5		56.1	26.4	
9.5		58.8	12.9	
9.5	17	22.5	5.6	
9.5		26.1	45.5	
9.0		38.0	14.9	
9.5		45.9	2.0	
9.1		52.0	55.7	b
8.9		55.5	6 4	
9.5	18	59.2	12.0	
9.5	19	1.3	51.9	
9.4		56.9	7.6	
9.4	20	2.2	7.8	
9.5		4.3	40.1	
10pr.		+ 34.72	— 1.04	

1581 — 1640

	7ᵐ		+17°	
m	°	′ ″	′	
9.3	20	7.5	14.2	
9.5		25.3	51.5	
9.1		26.8	44.1	b
9.5		43.6	20.9	
9.5	21	10.3	59.0	
8.5		11.2	9.9	K
8.5		23.0	40.0	K
9.5		43.7	55.0	
9.0	22	4.3	14.5	K
9.5		11.8	32.8	
9.5		20.3	33.5	
9.5		25.4	3.2	
9.5		30.8	12.8	
9.5		43.9	13.3	
9.0	23	10.2	39.7	K
6.2		25.8	23.1	K
9.5		50.6	55.3	
9.0	24	38.8	21.7	
9.0		38.8	34.6	
9.0		42.3	45.9	
9.0		48.3	26.9	
9.5	25	4.0	8.5	
9.5		5.1	55.6	
9.0		13.4	53.3	K
9.5		18.6	32.8	
9.5		21.5	2.2	
9.4		27.0	54.8	
9.5		37.3	31.8	
9.5		58.2	26.0	
8.0	26	6.8	15.1	B
8.8		7.2	42.5	K
9.5		19.7	30.3	
9.3		25.3	43.8	
9.1		32.0	57.8	
9.0		52.7	40.2	K
9.5		54.8	19 6	
7.9	27	2.6	41.8	K
9.0		6.7	36.5	K
9.1		30.3	27.9	b
*9.3		49.6	14.5	
9.5	28	22.4	54.6	
9.5		31.8	2.3	
8.0		47.4	13.3	K
9.5		49.9	33.8	
9.5	29	18.0	31.7	
9.5		41.8	40.1	
8.5		44.9	23.8	L
9.5	30	2.7	11.3	
9.5		25.2	31.1	
9.3	31	5.0	49.0	
8.8		15.4	46.2	K
9.5	32	25.0	38.7	
9.5		37.2	26.1	
8.5		45.2	12.4	K
9.0		55.1	41.7	Kb
9.5	33	4.3	59.3	
9.5		12.7	55.1	
9.4		39.1	13.6	
9.5		45.5	12.7	
9.3		52.3	3.3	
10pr.		+ 34.64	— 1.23	

1641 — 1700

	7ᵐ		+17°	
m	°	′ ″	′	
9.5	34	1.1	44.5	
9.4		4.5	35.9	
9.1		6.2	28.5	b
9.5		8.5	15.1	
9.2		24.0	57.0	
9.0		27.1	45.2	K
9.4		27.8	34.4	
8.9		28.5	3.7	
9.0		29.0	58.9	
9.5	35	16.6	14.1	
9.5		26.2	58.4	
9.1		39.6	29.4	
9.3		41.4	26.6	
9.1		48.9	51.0	K
9.1		55.3	22.8	K
8.5	36	15.7	49.9	K
8.3		21.0	20.1	K
9.5		31.6	49.2	
9.2		36.6	31.5	
9.2		44.0	21.8	
9.5	37	16.0	8.0	
8.1		56.1	22.1	K
9.5		59.2	55.1	
9.4	38	5.4	7.4	B
9.5		5 7	34.4	
7.8		20.8	0.3	K
9.0	39	3.1	35.5	
9.3		9.5	17.0	B
9.5		13.7	42.8	
9.5		20.4	6.4	
9.5		28.2	44.8	
9.5		30.7	49.1	
8.9		31.0	4.5	K
9.5		57.7	29.1	
9.1	40	2.0	22.1	b
9.5		13.4	17.6	
9.4	41	1.5	26.6	
9.5		7.1	46.2	
9.5		27.2	47.1	
9.5		38.6	11.1	
9.3		51.2	55.6	
8.7	42	7.0	50.3	K
9.2		13.9	50.8	K
8.1		17.2	14.5	B
9.1		33.4	5.4	
9.3		46.8	56.8	K
9.5	43	6.3	33.6	
9.5		6.3	58.9	
9.5		7.1	35.9	
9.5		12.1	48.6	
9.5		24.6	36.1	
9.5		52.4	43.8	
9.1	44	0.7	2.2	Kb
9.5		7.0	26.2	
8.8		58.1	55.9	K
7.2	45	7.0	12.9	L
9.3		15.1	33.8	
9.5		34.1	28.8	
9.5		46.6	51.2	
9.4	46	0.0	50.4	
10pr.		+ 34.54	— 1.40	

1466ᵐ				
9.5	51	4.0	24.2	a

1620ᵐ				
9.5	27	52.7	13.1	a

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	7ʰ		+17°			7ʰ—8ʰ		+17°			8ʰ		+17°			8ʰ		+17°			8ʰ		+17°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.1	46	14.5	12.8	b	9.5	58	52.4	56.6		9.5	12	18.7	3.2		9.3	27	53.3	42.6	K	7.7	39	55.2	55.9	K
9.5		37.1	30.6		8.6		52.7	44.5	K	9.5		32.1	7.8		8.5	28	9.7	47.3	K	9.5	40	6.3	45.1	
9.0		40.5	36.2		9.2	59	1.0	35.9	K	9.0		33.3	24.5		9.4		10.7	31.5	B	9.3		20.7	24.0	
9.4		51.4	1.5		9.5		6.1	23.9		9.5		36.3	40.3		9.5		12.3	11.4	B	9.3		24.1	53.2	
9.5	47	27.1	50.8		9.5		8.6	2.0		var	13	28.0	45.2	R	9.0		47.7	49.7	B	9.5		39.0	21.3	
9.5		38.6	36.5		9.3		40.1	17.2	B	9.2		38.6	59.7	K	9.5		51.9	2.6	B	9.5		54.0	36.1	
9.5		51.1	23.2		8.8		52.1	49.7	K	9.2	14	52.0	16.9	B	8.8		59.7	45.5	Kb	9.5		59.9	42.1	
9.5		51.1	8.3		9.2		58.0	11.1	Bb	8.7		58.0	20.9	K	9.3	29	3.3	49.7	B	9.5	41	5.3	21.8	
9.0	48	16.9	6.6		9.5	0	14.1	50.4		9.5		58.7	38.0	B	9.4		9.0	43.6		9.5		24.9	53.8	
9.2		20.8	54.2		9.4		21.6	6.2		9.4	15	2.8	56.1		9.5		19.4	27.2		9.5		37.2	10.3	
9.0		44.5	22.7		9.0		25.7	43.1	K	9.5		40.7	55.2		9.2		22.6	34.6	K	9.4	42	1.4	2.0	B
9.0	49	13.5	51.0	B	9.5		32.7	36.9		9.2		42.0	35.5		9.5		28.0	45.9		9.4		9.0	47.6	
9.2		20.2	56.6		9.2		33.0	10.1		9.0		53.3	40.6	K	9.4		36.7	59.6		9.5		23.0	41.8	
9.4		29.6	24.1		9.4	1	12.1	14.9		9.5	16	4.0	44.6		9.3		56.3	34.1	K	9.4		23.3	32.9	B
9.5		35.1	1.0		9.2		30.0	37.1		9.5		14.7	55.3		9.3	30	2.3	40.3		8.0		23.3	34.2	R
9.5		39.2	55.3		8.0		35.7	41.0	Kb	7.0		30.3	39.7	K	8.1		17.3	33.4	K	9.5		24.0	14.8	
9.5	50	10.2	23.8		9.3		39.4	20.6	B	9.5		36.0	47.3		9.1		30.7	45.2	K	9.5		47.3	40.8	
9.5		10.7	15.2		7.5		44.4	26.5	K	9.3		38.4	53.6		9.5		40.0	5.0		9.1	43	2.2	8.4	b
9.2		12.6	44.8	K	8.9		51.2	16.1	K	9.5		40.0	42.7		9.3		50.8	57.8	K	9.5		18.9	6.5	
8.7		22.0	7.3		9.5		59.0	15.9		9.4		56.0	16.7		9.5	31	13.4	2.1		9.5		33.3	35.5	
9.5		37.6	24.3		9.5	2	3.2	0.5		9.2	17	13 0	29.2		9.4		17.0	47.3		8.7		39.8	45.8	K
7.7	51	1.8	12.8	K	9.5		17.4	30.3		6.2		37.7	32.1	Lb	8.4		18.1	59.2	K	9.5		52.1	37.4	
9.0		2.3	22.1		9.4		33.1	22.8		9.4		45.6	0.9		7.8	32	44.0	0.5	B	9.1	44	21.2	1.8	Kb
9.5		16.5	57.3		9.5		48.7	35.1		9.5		53.3	45.8		9.2		47.0	49.3	b	9.5		39.6	58.3	
8.8		26.6	31.1	Kb	9.5	3	13.4	1.7		9.5	18	9.0	37.1		9.4		56.2	42.0		9.5		47.3	28.7	
9.5		41.1	51.3		8.3		19.1	26.8	L	9.3		25.9	8.9		9.4	33	7.8	59.1		7.7	45	2.5	54.8	L
8.7		49.2	27.0	K	9.5		51.3	8.8		9.5		58.1	7.1		9.5		8.8	17.8	B	9.2		20.4	31.9	K
9.5		52.4	16.8	B	9.5		55.0	29.4		9.5	19	4.3	8.6		9.5		20.4	55.7		8.6	46	2.8	43 9	K
9.5	52	6.1	8.8	B	9.5	4	3.9	5.9		9.2		27.2	49.3	K	9.5		23.3	54.7		9.5		12.4	30.9	
9.4		23.2	49.8		9.5		13.1	31.7		9.1		30.0	55.4	K	9.5		47.7	57.3	B	9.5		13.9	11.9	
5.8		28.0	43.1	L	9.5		31.0	23.3		9.3	20	7.0	58.0		9.3		53.8	1.8		9.5		26.4	10.1	
9.5	53	1.6	12.9		9.5		55.9	18.0		8.8		12.7	19.6	8	9.3	34	0.6	29.7		8.6		33.4	8.8	L
8.0		5.6	21.4	K	9.0	5	4.9	50.1	B	9.5		13.8	43.1		9.5		37.3	18.5	B	var	47	12.9	46.9	K
9.1		9.2	49.7		9.5		12.2	40.8		9.5	21	0.3	12.9		8.8		40.8	38.9	K	9.4		49.8	6.9	B
9.5		18.6	42.5		9.5		13.7	41.6		9.5		34.1	0.1		9.5		43.3	49.2		9.4	48	2.2	51.7	
9.5		26.1	39.0		9.4		22.0	19.4		9.5		40.3	15.4		9.4		49.3	52.9		9.3		5.3	22.5	K
9.2		33.6	25.9	K	8.5		22.7	5.2	K	9.3	22	1.8	8.8	Kb	9.4		55.3	59.4		9.4		20.8	30.5	B
9.5		34.8	35.9		*9.5		59.4	51.2		9.4		11.4	3.2		9.5	35	4.4	25.1	a	9.5		38.7	57.1	
9.3		48.1	34.2	K	9.5	6	10.4	52.0		9.3		14.0	32.3	K	8.5		17.4	24.1	K	6.8		58.8	42.4	K
9.5		49.3	46.3		9.4		12.9	19.2		9.5		14.4	40.0		9.0		29.0	24.4	K	8.9	49	35.3	6.3	
9.1	54	4.0	4.7		9.5		20.0	37.0		9.3		35.2	48.0		9.5		31.0	56.9		8.7		39.3	44.5	K
9.1		13.1	12.8	K	9.5		27.0	49.9		9.5	23	1.9	25.4		9.2		51.5	0.3	K	9.4	51	0.2	56.0	
9.5		31.2	36.6		8.6		30.2	2.5	K	9.3		4.2	5.3	B	9.5	36	3.3	41.0		9.5		10.4	40.8	
7.5	55	10.9	15.6	K	9.1		42.3	18.0	b	8.0		17.2	49.2	K	9.5		16.2	37.8		9.0		15.3	13.3	K
9.5		11.5	2.9		9.4		48.4	25.8		9.0	24	45.3	43.1	K	9.2		41.0	41.7		9.5		45.1	36.6	
9.5		34.2	20.1	B	9.5		57.8	34.1		9.5		49.8	58.4		9.0		51.3	18.5		9.2	52	29.2	7.5	
9.3		34.6	25.9	K	9.4	8	17.5	33.1	B	9.3	25	15.0	4.7		9.5	37	7.3	33.4		9.5		30.3	54.0	
8.5		39 5	2.5	K	9.4		24.4	36.5		9.4		22.0	51.7		9.0		17.3	27.8		9.3	53	10.2	45.7	aB
9.2	56	17.9	52.8	K	9.2		34.0	55.7		9.3		54.3	26.6		9.5		31.0	3.9		9.5		25.4	15.0	
9.3		53.2	27.8		9.4		50.2	45.9		9.3	26	2.3	40.3		9.5		38.3	33.4		7.5		35.8	39.8	Kb
9.5	57	7.7	20.0		9.5		52.0	40.0		8.3		9.4	22.5	B	9.3		53.3	36.2		8.2		50.1	54.1	K
9.5		21.8	24.2		9.3	9	16.1	51.7	K	9.5		13.3	54.1		9.5	38	4.4	31.3		9.5	54	11.8	40.8	
9.5		33.1	51.0		9.5		46.3	43.1		9.5		16.9	2.6	B	9.3		27.3	15.1		9.2		22.7	0.6	K
9.5		44.5	46.6		9.5		53.0	37.3		9.0		21.7	29.6		9.3		39.4	34.8		9.2		34.3	13.5	b
9.5		46.2	57.9		9.3	10	2.6	3.9		9.4		29.1	57.5		9.3		44.0	55.2		9.3	55	35.7	14.9	aB
9.5	58	1.4	36.9		9.3		5.3	1.9		9.3		32.3	13.0	K	8.6	39	8.7	47.3	K	9.5		52.4	40.8	
9.5		12.8	43.5		9.5		33.1	43.1	b	8.8		55.7	46.2	K	9.5		13.3	19.6		9.5	56	19.4	52.2	
9.5		27.4	49.8		9.5		56.6	42.6	B	9.4	27	19.4	9.2		8.8		17.7	30.8		9.5		21.1	1.2	
9.5		36.7	38.4		9.5	11	12.7	59.5		9.5		19.4	34.0		9.3		39.2	1.8	b	9.3		25.1	26.0	b
9.2		40.3	16.4	b	9.4		56.7	27.1		9.3		37.3	45.0	K	9.5		42.3	32.0		9.3		52.9	55.7	
		+	—				+	—				+	—				+	—				+	—	
10pr.		34.44	1.57		10pr.		34.33	1.73		10pr.		34.17	1.92		10pr.		34.02	2.08		10pr.		33.87	2.22	

1797ᵃ			
9.5	5	51.3	53.4

3°—10°

+17°

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	8ᵘ—9ᵘ		+17°		9ᵘ		+17°		9ᵘ—10ᵘ		+17°		10ᵘ		+17°		10ᵘ		+17°	
m	′	″	′		′	″	′		′	″	′		′	″	′		′	″	′	
9.4	57	23.8	59.0	a	9.5	11	17.4	6.1	9.4	34	32.4	13.8	8.9	4	25.3	2.9	K	9.5	26	13.2	16.2	
9.5		35.3	20.5		7.7	12	33.7	44.2	K	9.5		43.3	0.9		9.5		58.1	24.5		9.5		14.7	11.4	
9.4		36.1	41.5		9.5	13	19.8	57.7		9.5		45.4	31.8		8.3	5	8.0	15.0	K	9.5		32.2	37.9	
8.0		37.2	58.2	K	9.3		20.3	50.2		9.5	35	38.0	22.8		9.5		9.5	28.0		9.5		51.3	57.4	
9.5		39.6	55.7		6.8		21.4	12.9	K	8.8	36	35.5	4.7	K	8.6		15.3	44.6	K	9.5	27	36.9	35.5	
9.5	58	3.4	1.2		9.5		37.7	56.2		9.5		43.4	9.4		9.5		38.6	9.2		8.8	28	24.7	47.3	
7.5		6.9	41.8	K	9.5		38.9	22.2		9.5	37	1.4	41.7	b	9.5		43.1	49.4		9.5		26.5	19.3	
9.5		17.8	14.3		9.3		42.4	4.6	K	9.0		49.2	9.0	K	9.5	6	45.0	45.8	a	9.5		26.8	0.0	
9.5		30.6	27.9		9.5		53.8	45.5		9.5	38	8.7	3.5		9.3		47.5	30.9		9.0		51.5	34.4	B
9.5		46.3	49.3		9.5	14	4.4	49.0		9.5		42.9	11.0		9.4		50.7	41.8	R	9.9	29	16.3	41.3	Kb
9.5		59.4	49.4		9.6		20.2	55.7	aB	9.3	39	13.9	32.0		9.5	7	14.3	29.9		9.5	30	51.6	51.7	
9.5	59	10.9	27.4		9.5		39.1	33.1		9.5		25.1	22.5		8.2		19.5	34.2	K	8.8	31	6.0	46.4	K
9.0		23.3	11.2		9.1		46.4	54.6	b	9.3		30.3	14.8	R	9.5		53.4	54.0		8.9		47.5	6.6	
9.4		34.2	50.9		9.5	16	7.1	0.8		9.5		34.1	52.5		9.5	8	18.4	1.9		8.7		49.7	11.8	B
9.4		38.4	6.6		9.5		24.2	21.4		9.5		37.0	27.4		9.5	9	20.5	11.2	aB	8.4	32	5.5	19.6	R
9.2		40.6	35.7	K	9.5	17	23.0	59.3		9.5	40	15.2	8.6		9.5		33.2	23.1		9.5	33	8.2	53.0	aB
9.4		57.1	6.8		9.5		20.5	29.2		9.0		15.7	34.3		8.2	10	7.5	54.4	L	9.3		11.5	56.0	a
8.0	0	27.8	16.4	K	6.3		30.9	12.5	K	9.5		30.3	59.2		9.0		11.6	25.4	K	9.4		15.2	47.4	aB
9.0		43.5	0.3	K	8.8		36.4	42.4	K	9.2		32.1	43.5	b	9.5		34.7	6.2		7.5		23.2	38.5	K
8.5		47.8	49.4	L	9.5		50.4	2.0		8.8	41	43.4	2.0	R	9.4		43.8	15.7		9.2		30.7	56.0	
9.4	1	0.3	21.5		9.3	18	2.4	5.6	K	8.0		54.4	30.2	K	9.5		53.9	31.4		9.3		56.6	56.5	
9.5		0.8	56.8		9.5		6.4	16.6		9.4		58.8	38.2	B	9.5	11	32.3	14.3		9.4	34	9.4	11.7	
9.2		7.9	15.7		9.1		27.1	9.7		8.8		59.1	1.5	K	8.1		36.5	40.2	K	8.6		23.8	2.2	K
9.0		58.8	25.3	K	8.0		35.1	19.3	K	8.5	42	0.8	14.5	K	9.5		52.9	44.8		9.0		46.4	10.7	K
9.5	2	25.4	57.9	aB	9.0		36.5	44.9	K	9.5		14.8	26.7		9.3		55.3	56.4		8.5	35	1.2	53.5	K
9.5		33.4	51.9		9.0		51.5	28.3	K	9.0		54.1	39.0		9.5	12	29.9	29.3		9.5		51.4	21.8	
8.7		36.9	36.7	K	9.5	19	10.5	1.7		9.5	44	6.1	25.3		8.9		31.3	55.9		9.5	36	48.2	55.1	
9.0		56.8	42.5	Kb	9.4		19.2	7.0		8.4		11.5	9.3	K	9.0	13	4.0	56.0	K	9.5	37	8.6	53.1	
9.5	3	42.3	15.6		8.7		43.8	30.6	K	9.0		29.4	7.3	K	9.4	14	15.2	22.3		7.8		22.6	5.6	K
9.5		49.4	8.1		8.7		53.8	37.2	K	8.8	45	32.8	37.3		8.6		20.4	10.8	K	9.5		24.5	27.9	
9.2		52.8	26.6	K	9.5	20	56.2	57.8		8.9		58.4	4.0	R	8.6		23.8	50.9		9.4		31.4	58.4	
7.7	4	34.3	7.1	K	8.5		58.8	44.5		8.3	46	18.2	51.2	K	7.8		43.5	28.5	K	8.3	38	48.7	38.2	K
9.5		36.3	30.1		9.5	21	0.8	51.4		*9.0		53.1	29.7	K	8.5		50.6	39.2		7.0		57.1	17.5	K
8.0		43.3	13.2	K	9.5	22	48.9	11.4	aB	9.5	48	39.4	3.2		9.5	15	19.5	18.2		8.7	39	40.1	41.3	K
9.4		46.2	50.4		9.5		58.4	18.0		9.0	49	3.4	44.5	K	9.5		51.5	43.0		9.5	40	30.1	8.7	
9.5	5	34.5	51.5		9.4	24	11.4	25.2	b	7.1		37.9	9.1	K	9.5		57.2	59.5		9.2	41	3.7	10.6	
9.1		54.8	33.6	K	8.8		57.9	8.0	K	9.0		46.4	8.8	K	9.2	17	13.1	53.0		9.5		26.4	22.7	
9.5	6	13.4	15.3		9.3	25	23.4	46.6	b	9.3	50	3.7	10.7	K	9.1		31.2	25.1	K	9.4		32.1	57.9	
9.2		43.3	1.2		9.5		31.9	40.3		9.5		33.8	6.9		8.8		33.2	38.5	R	7.0		42.2	55.4	K
9.5	7	0.4	22.2		9.4		40.6	54.9	aB	9.1		40.1	23.1	b	9.5		45.4	12.0		9.3		48.0	15.9	
9.5		1.4	12.3		9.5		44.7	42.3	aB	9.5	51	16.0	28.7		8.6	18	33.2	58.1	K	8.8	43	12.7	23.8	Kb
9.4		2.7	7.8	K	9.5	26	8.6	47.0		9.0		55.8	25.3		9.5		43.2	34.7		9.5		23.2	51.4	
9.1		16.9	43.9	b	9.5		29.6	7.4	aB	*9.5	52	25.4	1.7		9.1		51.5	29.6		9.4	44	23.1	15.9	
9.5		19.6	59.3		9.5		34.4	34.8		*9.1	54	24.1	7.3	K	7.5	19	2.9	58.1	K	8.9		49.4	51.4	
9.5		33.3	28.0		8.7		43.9	5.8	Kb	9.5		38.5	44.9	b	9.5		49.6	53.0		9.3		53.7	29.6	
9.5		45.9	14.9		9.5	27	19.1	12.1		9.2	56	1.8	17.7	b	9.5		51.9	22.4		8.2		58.2	5.2	Kb
9.5		52.8	7.6		9.5		48.8	39.7		9.3		11.9	9.2	B	9.2		53.7	5.2	B	8.6	45	14.4	27.2	K
9.5		53.3	10.8	B	8.2	28	17.0	53.4	K	9.3		20.7	3.2	B	9.5	20	17.3	11.7	aB	9.5		19.6	57.0	
9.5	8	29.8	25.4		6.3	29	2.6	6.3	Kb	9.0	57	22.4	10.2	Kb	9.5		28.0	11.5	aB	8.2		30.7	43.7	K
8.9		34.9	50.0		9.3		12.5	34.0		9.5		31.6	4.2		9.5		31.0	8.5		9.0		32.4	29.9	K
9.5		59.5	7.3		9.5		42.5	58.7		3.4	59	25.4	28.7	K	7.2		53.8	51.9	K	8.9	46	13.1	53.0	R
8.7	9	17.3	9.4	Kb	9.3		48.4	12.8		9.5	0	13 4	52.4		9.3	21	39.5	15.1		9.5		41.6	52.0	
8.0		33.4	19.2	L	9.1		51.1	39.0	b	9.2		24.9	51.3		8.3		55.2	43.4	K	9.0	47	12.4	10.0	K
9.4		46.2	37.1	B	8.0		58.4	30.0	K	9.5		25.3	12.7		9.5	22	28.9	14.5		9.0		13.1	37.1	
9.5	10	21.0	11.1		9.5	30	27.0	41.5		9.5		35.5	18.9		9.5		30.2	21.7		9.1		30.4	29.0	
9.5		25.4	37.3		9.3		32.8	27.6	K	9.5	1	51.9	2.5		9.5		31.9	40.6		9.4	48	30.6	5.1	
8.5		31.3	50.6	K	9.5	31	28.1	24.5		9.0		57.3	29.0	K	9.2	24	45.5	38.0	b	9.1		48.4	23.0	b
9.1		31.5	19.4		8.6	32	24.2	36.9	K	9.1	2	11.8	6.3		9.5		54.2	13.1		9.5	50	9.4	18.6	
9.4		55.5	26.1	B	9.4	33	3.9	42.2		8.2		14.3	13.6	K	9.5	25	32.9	31.4		9.5		39.4	16.1	
9.0		57.4	47.5	K	8.2	34	17.9	43.2	K	8.6	3	52.8	58.9	K	9.1	26	6.2	14.0	b	8.2		40.0	22.6	B
		+	—				+	—			+	—			+	—			+	—		
10pr.		33.65	2.40		10pr.		33.42	2.56	10pr.		33.05	2.79	10pr.		32.60	2.99		10pr.		32.20	3.13	

2153ᵃ				
9.5	47	24.5	10.4	B
2163ᵃ				
9.5	54	22.4	46.8	b

2301—2360

	10ᵃ—11ᵃ	+17°	
m	′ ″	′	
8.8	50 46.5	57.2	K
9.5	55.1	34.8	
9.4	52 3.4	39.0	
8.0	6.6	10.2	K
9.4	37.2	52.9	
9.5	53 4.1	30.7	
9.5	4.1	55.8	
8.0	54 43.4	39.6	B
8.3	56 24.9	1.7	Kb
9.5	57 29.4	13.8	
9.4	39.1	30.0	
8.8	40.7	21.8	Kb
9.4	58 44.8	58.3	
9.0	46.9	38.1	K
9.4	59 21.7	34.1	
8.6	0 13.2	39.8	
9.3	48.5	26.7	
6.8	1 1.7	59.6	K
8.9	8.4	35.0	
9.5	38.4	27.7	
9.5	48.0	38.0	
9.4	3 11.8	6.1	
9.0	16.2	51.1	K
9.5	17.0	16.5	
9.5	18.0	24.3	
9.5	5 11.1	52.0	
9.5	23.7	38.6	
8.9	25.9	33.6	K
9.5	6 28.6	55.8	
8.4	39.2	42.9	K
8.4	7 2.8	7.6	K
9.5	9.4	58.8	B
9.2	8 2.7	47.9	K
9.2	56.8	45.6	K
9.1	9 0.0	33.2	
9.1	11.7	34.7	B
8.6	39.2	44.3	Kb
9.1	10 24.7	25.1	
9.0	41.5	16.1	K
8.0	11 4.2	14.4	K
9.3	12 0.2	34.8	
9.0	32.4	52.7	R
7.8	33.1	54.6	L
8.5	37.5	31.8	K
9.5	52.3	2.8	
9.3	59.7	46.7	
9.5	14 23.7	2.7	
9.5	24.9	8.7	
9.5	15 24.6	6.2	
9.3	48.5	15.8	
7.2	16 4.0	56.6	L
8.8	11.5	12.0	K
9.4	49.2	8.8	B
9.3	52.1	14.1	*B*
8.9	17 3.7	7.7	K
6.0	18 3.3	15.8	K
9.5	25.4	2.5	
9.4	46.3	2.1	
9.5	19 5.6	45.3	B
9.5	20 8.6	50.5	*B*
	+	—	
10pr.	31.69	3.25	

2361—2420

	11ᵃ	+17°	
m	′ ″	′	
9.4	20 44.5	19.8	
8.4	21 36.5	11.0	K
8.5	22 24.5	47.2	K
9.1	35.2	51.4	K
9.5	23 0 5	28.4	
9.4	24 9.2	44.7	
9.4	39.8	11.0	*Rb*
9.5	25 8.1	45.2	
9.5	9.3	26.6	
9.5	10.6	35.8	
9.5	37.1	18.5	
9.5	26 27.6	33.1	
9.5	52.3	23.1	
*5.7	27 10.4	35.5	K
9.5	28 18.0	21.7	
9.3	26.3	47.3	
9.0	33.1	10.7	L
9.5	29 4.3	19.0	
9.3	45.8	12.2	
9.5	31 19.3	40.6	
8.4	20.9	54.0	Kb
8.1	56.0	19.3	L
9.5	32 26.6	34.2	
8.9	59.6	36.0	
9.5	33 13.9	56.2	
9.1	17.6	4.2	K
8.7	18.5	49.0	K
8.8	48.7	49.0	K
9.0	34 7.7	29.0	K
9.0	12.3	28.3	K
9.5	36 16.6	51.5	
7.8	18.4	7.9	Kb
9.5	37 23.6	40.4	
8.6	33.7	58.5	K
9.4	38 41.3	40.7	
9.5	39 20.6	39.0	
8.9	30.3	1.6	
9.5	40 6.9	51.0	
9.3	49.7	32.8	K
9.5	41 7.9	39.1	*aB*
9.5	39.6	15.5	
6.5	44.8	3.0	K
9.4	52.2	40.8	
9.0	42 5.2	23.7	K
8.9	43 25.7	11.6	K
9.5	44 10.2	2.4	
9.3	16.2	53.5	
9.5	45 0.6	32.4	
8.7	43.0	39.9	K
9.4	46 33.4	39.4	*aB*
9.5	47 38.1	9.8	
9.5	45.6	31.7	*aB*
9.1	48 4.6	42.8	*b*
9.3	21.3	5.3	
9.4	22.4	20.0	
9.5	48.4	57.0	
9.3	49 21.8	52.2	
9.4	35.9	40.9	
9.4	50 2.1	2.2	
8.7	11.9	13.5	K
	+	—	
10pr.	31.17	3.32	

2421—2480

	11ᵃ—12ᵃ	+17°	
m	′ ″	′	
9.4	50 46.3	2.0	
8.5	52 48.4	24.8	K
9.3	51.8	7.5	
9.5	53 17.4	28.9	
9.2	59.1	44.4	*b*
9.5	54 15.8	1.3	
9.5	55 45.2	57.3	
9.5	50.7	28.2	
9.5	57 13.5	31.2	
7.6	17.4	5.5	K
7.5	58 34.2	34.7	K
9.5	59 44.0	43.6	
9.3	0 28.0	9.6	
9.0	47.4	29.7	
9.3	1 6.1	38.9	K
9.3	19.8	42.2	Kb
9.4	32.2	31.0	
9.3	49.4	45.3	*R*
6.8	49.6	59.8	K
9.5	58.1	0.7	
8.8	2 8.2	12.6	K
9.5	8.2	19.4	
9.5	27.2	27.2	
7.0	44.0	13.7	K
8.3	53.0	10.0	K
6.0	3 8.3	36.4	Kb
9.4	54.4	8.4	
9.3	57.4	38.4	K
9.5	4 24.5	20.2	
9.3	5 40.6	12.0	*b*
7.3	6 7.4	59.4	K
9.4	46.5	28.0	
9.0	7 5.0	38.8	
6.5	51.9	43.6	K
9.5	59.5	46.7	
9.5	9 1.2	57.2	
9.5	41.0	19.2	
9.4	59.5	20.9	
9.5	10 6.2	14.8	
9.2	11 5.5	1.1	*b*
9.5	21.5	5.8	
7.5	46.5	22.3	K
8.0	12 27.9	36.4	K
8.7	13 35.5	48.0	K
9.3	14 11.5	25.4	
9.5	20.0	37.4	
9.4	34.6	21.3	
9.5	38.4	58.5	
6.8	41.9	32.3	K
9.0	15 13.4	9.6	*B*
9.5	18.0	9.6	
8.2	38.8	2.4	K
9.3	16 12.5	41.5	
9.5	32.8	28.3	
8.7	37.9	13.4	Lb
9.5	40.0	18.5	
8.6	17 1.8	9.6	L
9.4	34.2	7.0	
8.3	34.8	0.2	K
9.4	42.5	29.5	*Bb*
	+	—	
10pr.	30.61	3.34	

2481—2540

	12ᵃ	+17°	
m	′ ″	′	
9.5	18 3.4	33.6	*b*
9.5	30.0	12.8	
9.1	19 4.8	9.8	K
9.5	20 26.0	19.5	
8.8	57.2	51.5	K
9.5	21 10.3	53.4	
9.5	15.0	21.6	
8.9	16.7	33.7	
7.5	23 48.9	25.3	K
9.5	57.0	25.0	
9.5	24 0.1	4.8	
9.2	4.4	1.0	*b*
9.5	53.5	36.4	
8.9	25 1.5	20.6	
9.5	38.9	40.5	
9.3	26 2.4	20.2	
9.5	34.5	35.0	
9.1	27 17.0	13.7	*b*
9.3	28 16.4	13.3	
8.7	30.0	38.4	*B*
9.1	58.4	55.3	K
9.0	29 2.5	20.6	
9.5	37.0	3.4	
5.8	42.7	53.6	Kb
9.5	30 18.4	7.5	
9.4	22.2	5.3	
9.5	33.6	6.0	
9.5	31 22.0	55.9	
9.3	35.9	1.1	
9.1	41.5	18.2	K
7.8	53.9	17.1	K
9.1	56.5	18.9	K
9.5	32 5.4	26.1	
9.3	9.5	35.3	
9.5	16.5	41.7	
9.2	23.5	46.0	
9.4	29.0	30.2	
9.3	51.9	45.7	
9.4	33 3.6	24.9	
9.2	8.0	52.5	*b*
8.2	13.0	4.9	K
9.5	26.7	18.5	
9.3	34 22.5	31.1	
9.5	26.8	36.4	
9.4	35 26.0	58.5	
9.0	48.5	2.8	*B*
9.0	36 0.0	54.1	
9.2	1.3	52.7	*a*
9.5	37 34.4	7.0	
9.5	38 44.0	18.8	
9.5	39 4.9	37.7	
8.6	14.4	18.2	Kb
5.2	24.3	22.5	K
9.4	34.7	57.3	
8.9	35.4	44.4	
9.1	45.0	16.5	L
8.7	40 10.6	37.1	K
9.3	10.6	0.9	
9.5	19.0	5.8	
9.5	20.0	20.8	
	+	—	
10pr.	30.14	3.31	

2541—2600

	12ᵃ—13ᵃ	+17°	
m	′ ″	′	
9.4	40 35.3	54.6	
*8.9	41 25.1	43.8	K
9.4	42 7.5	2.1	*b*
9.5	56.4	57.7	
9.5	43 5.0	8.6	
9.5	26.5	34.2	
9.5	40.5	47.3	*R*
9.5	52.8	16.7	
8.8	57.1	50.6	K
8.5	44 26.5	33.5	K
6.3	59.0	52.0	Kb
8.5	45 1.8	20.7	
7.2	9.7	53.9	K
9.5	51.1	37.3	
9.5	54.5	45.8	
9.5	46 15.0	42.7	
9.5	46.0	9.6	
9.5	47 26.1	54.1	
9.5	53.7	52.3	
9.5	48 39.2	6.2	
9.1	41.8	40.3	*b*
8.9	44.5	0.9	K
9.5	49 55.7	6.7	
9.5	50 28.5	22.4	
8.7	51 25.7	57.1	K
9.5	28.4	8.1	
9.5	36.5	40.7	
9.0	37.1	0.0	
9.5	58.0	11.8	
9.5	52 32.1	3.2	
9.5	53 50.8	25.5	
9.5	57.7	25.8	
6.7	59.8	55.2	K
9.1	54 23.7	32.7	K
9.5	41.5	50.5	
9.4	54.6	51.7	
9.3	55 3.7	34.1	K
9.5	5.5	48.0	B
9.3	24.6	45.8	
9.2	34.9	13.8	K
9.5	56 33.4	58.0	
9.5	57 33.6	47.9	
9.5	57.1	38.6	
9.5	58 2.6	44.4	
9.5	49.6	54.1	*b*
9.5	59 3.6	5.5	
9.5	22.0	47.5	
9.5	45.3	18.9	
9.0	0 9.2	0.7	K
9.5	1 35.6	20.7	
9.0	54.2	53.4	K
9.3	2 3.3	48.5	Kb
9.5	20.5	26.8	
9.3	35.4	29.5	
6.8	37.9	36.1	K
8.2	38.4	14.5	K
9.3	38.6	5.7	
9.5	3 22.5	2.7	
9.0	4 15.6	12.4	
9.5	46.5	28.2	
	+	—	
10pr.	29.77	3.25	

2373ᵃ

9.2	27	5.4	35.3	*aB*

2541ᵃ

9.5	41	21.0	46.3	*a*

3ʰ—15ʰ **+17°**

2601 — 2660					2661—2720					2721—2780					2781—2840					2841—2900				
	13ʰ		+17°			13ʰ—14ʰ		+17°			14ʰ		+17°			14ʰ—15ʰ		+17°			15ʰ		+17°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	5	39.5	35.3		9 5	38	29.5	25.8		9.0	8	35.7	10.6	K	9.4	38	59.7	53.6		8.8	9	13.2	1.5	L
8.7		56.2	10.4	L	9.5		33.4	32.0		9.2	10	39.5	22.4	Bb	9.2	39	4.3	18.6		9.3		41.2	39.3	
9.2	6	8.6	7.1		9.1		38.1	7.9	b	9.5	11	10.2	16.7		7.6		8.2	24.4	K	8.0		45.1	20.0	K
9.5		43.7	5.0		9.4		42.5	57.4		9.3		31.2	19.5		9.2		16.2	23.3		8.7	10	26.7	36.2	K
9.3	7	45.5	45.9		9.5		51.5	42.4		8.9	12	14.2	20.6		8.8		36.0	8.1	K	9.5	11	20.3	1.5	
9.2		49.2	4.8		9.4	39	0.7	52.8		9.5		56.7	19.5		8.7	40	53.7	44.4	K	9.0		22.4	45.9	K
9.5	8	45.0	7.9		9.1		15.1	12.6	b	9.5	13	22.6	59.8		9.0	42	34.7	25.7	K	9.5		26.2	27.5	
9.5		51.6	7.7		9.5		45.6	4.5		9 5	14	9.7	20.9		9.2	43	10.1	52.4	b	9.2		37.8	48.8	B
9.5	9	31.2	0.6		9.5		47.3	36.2		9.5		12.7	43.7		9.5		23.0	54.3		9.3	12	26.2	27.2	
9.3		35.0	30.6		9.2	40	34.3	39.2	b	8.7	15	45.0	13.8	L	9.0		30.7	24.4	K	8.8	13	29.4	46.2	
7.0		39.4	48.1	K	9.3		52.7	58.7		8.8	16	14.7	46.4	L	9.3		42.7	46.1		8.0		42.8	4.5	K
9.5	10	48.9	6.5		9.1	43	43.2	44.8	K	9.2		20.1	55.7		9.5	44	42.7	29.9		9.5	14	6.1	44.2	
9.5	11	4.1	2.9	b	9.4		50.5	18.7		8.5		59.7	31.2	K	9.5	45	27.2	22.7		9.0		23.2	10.3	
9.5		20.0	0.7		9.3		59.1	18.3		9.5	17	37.2	31.0	aB	9.5		50.2	34.7		9.1	15	3.7	34.1	b
9.5		47.5	38.0		9.2	44	48.4	59.3		9.2	18	12.2	11.6		9.4	46	39.4	24.3	aBb	7.7		14.7	1.3	K
9.2	12	51.4	25.1	Kb	7.2	45	36.0	26.0	K	9.2	19	19.2	34.4		9.5	47	7.2	16.4		9.5		56.0	6.3	
9.5	14	19.6	8.6		9.3	46	48.1	10.8		7.8		52.5	4.4	K	9.5		40.2	34.0		9.5	16	27.2	20.6	
9.5	15	14.5	47.1		9.5	47	30.0	46.8		8.6	21	5.2	12.9	K	9 3		47.7	19.5		9.5	17	40.1	46.6	
8.9		38.7	1.9		9.1	48	6.5	28.8	K	8.5		9.9	35.1	K	9.5	48	6.7	52.4		8.2		49.5	11.6	K
8.8		50.5	49.6		9.3		7.4	32.6		9.3		17.2	45.8		9.4		11.3	23.0	K	8.8	18	52.9	2.7	K
8.5		51.5	1.9		9.5	49	9.8	40.8		9.5		54.7	20.6		9.5	49	17.0	30.6		9.5	19	4.0	44.0	B
9.5	16	12.4	4.1		8.5		45.9	44.3	K	9.2	22	8.7	38.2	K	9.2		40.9	40.6	B	9.2		11.4	40.4	K
9.5		21.6	1.1		9.5	50	7.2	46.4		8.8	23	2.5	25.3	Kb	7.8		46.4	41.5	K	8.8		20.7	37.6	K
9.3		22.3	41.3		9.5		25.1	35.7		9.5		48.2	46.1		8.7	50	32.1	27.9	K	9.5	20	13.2	29.3	
9.2		39.0	40.0		9.3		26.8	20.5		9.2		57.5	9.6	aB	9.5		50.6	31.0		9.5		19.8	3.5	
8.5	18	23.0	17.6	K	9.5		58.8	20.2		9.5	24	3.3	9.5	aB	8.0	52	15.6	55 6	K	9.5		39.7	13.0	
7.8	19	41.4	43.3	K	7.3	51	8.8	7.1	K	9.5		21.7	23.0		9.5		22.5	49.5	Kb	9.5		41.9	24.7	
9.5	20	16.8	57.4		9.5		40.6	53.8		8.3		24.7	42.6	K	9.5		28.0	23.3		9.5		45.7	14.4	
9.5		42.0	32.7		9.4	52	25.1	18.7		8.8		49.7	44.0	K	9.5		59.0	39.9		9.5	21	32.8	1.2	
9.0	21	8.9	56.0		9.5	54	29.4	51.6		9.2	25	20.8	59.4		9.3	53	41.6	8.9	aB	9.2	22	42.1	40.5	b
9.0		15.5	6.5		7.0		43.4	27.1	K	8.7		30.5	27.8	K	9.5	54	13.0	7.0		9.5	23	25.8	12.4	
9.5		27.5	54.4		9.5	55	8.8	6.0		9.1		30.7	57.0	b	9.5		48.0	23.0		9.5		42.7	24.9	
9.4		56.0	30.3		9.5		49.0	10.2		8.8		34.2	4.2		8.8	55	15.6	59.9	K	8.5	24	11.9	57.0	Kb
7.3	22	41.7	38.6	K	9.5		53.3	59.2		8.3		42.0	11.6	K	9.0		34.8	47.1	K	9.0		34.6	48.0	
8.8		47.9	14.0		9.4	56	12.0	3.0		8.8	26	24.2	48.5	K	9.5		54.0	14.7		9.5	25	15.6	6.6	
8.9		51.5	26.9		9.4		14.2	13.2		9.5	27	28.2	26.0		9.4		53.7	33.3	K	9.5		38.1	17.2	
9.0	23	9.0	7.6		9.5		30.0	11.2		8.5	28	1.2	4.1	Kb	9.1	56	8.5	29.2	K	9.3	26	12.0	20.6	
9.3		19.5	28.6		8.8	57	42.2	56.5	K	9.3		39.2	14.7		9.5	57	10.5	32.0		9.5		41.2	57.3	
9.5		36.0	34.1		8.3	58	20.1	23.6	K	9.5	30	18.3	53.3		9.5		49.5	17.1		9.5		50.7	34.1	
9.5	24	26.1	54.8		8.7	59	18.1	8.3		9.1		31.9	49.9	aB	9.5	58	34.3	8.1		6.7	27	15.0	37.6	K
8.0		48.7	53.2	K	9.3		30.7	23.5	a	9.3		54.7	22.8	aBb	9.1	59	28.0	32.2	K	8.5	29	3.2	22.6	
9.4	26	23.5	27.1		6.9		35.9	39.6	K	9.2	31	0.7	53.3	K	9.3	0	40.9	58.5	B	9.5		26.7	39.7	
9.5		29.2	44.7		9.4		48.6	22.6	aB	9.5		20.7	15.7		9.4		57.8	22.5		9.5	30	31.7	13.0	
8.6		37.6	6.5	K	8.0	0	58.4	33.6	K	9.3	32	17.2	13.2		8.6		59.7	47.4	K	9.5		34.2	29.3	
8.2		47.1	1.4	K	8.5	1	25.2	24.7	K	8.8		20.7	39.1	K	9.5	1	48.0	22.9		9.5		36.4	43.1	
9.5	27	57.0	45.8		7.8		30.2	47.4	K	9.3		30.7	51.0		9.5	2	42.5	3.1		9.5		38.8	52.2	
9.4	28	55.0	35.4		8.7	2	37.4	44.0	Lb	9.5	33	6.7	57.1		9.2		44.2	55.7	K	7.8		54.1	0.7	K
9.5	29	20.5	36.8		9.5	3	3.1	54.9		3.8		55.7	3.0	K	8.9	4	31.5	56.2	K	8.7	31	25.4	43.1	K
9.3		43.5	40.3		9.5		13.2	23.7		9.5	34	15.2	41.2		9.5		48.8	3.7		9.5	32	21.6	58.2	B
9.3	30	4.1	8.2	b	9.1		48.7	2.5	b	9.4	35	4.2	13.1	B	9.1	5	11.8	11.4	b	9.1		32.2	4.2	
9.1		6.4	57.1	K	9.5	4	38.7	45.4	B	8.8		29.7	11.5	K	9.2		52.2	29.0	K	9.1		55.5	7.5	
9.5	31	8.8	52.2		9.3		59.2	19.9		9.0		53.4	52.5	K	9.3	6	21.5	3.6		9.1	33	16.7	13.7	K
9.5	32	1.5	21.0		8.8	5	3.1	48.7		9.4	36	16.5	59.5		9.5		40.5	16.5		9.5		38.3	12.7	
9.5		36.1	5.4		9.5		34.8	8.2	aB	9.5		36.7	15.0		9.1	7	3.5	3.3		9.0		47.2	51.5	K
9.5		46.5	39.9	b	9.5		38.2	14.3	B	9.4		51.9	13.0	B	9.3		19.3	19.6		8.8	34	9.1	3 1	K
9.5		50.0	47.8		9.5	6	2.7	21.6		8.7	37	12.7	3 5		9.0		28.8	57.0	K	9.5		16.7	6.3	B
9.5	33	38.1	3.0		8.4		26.3	12.2	K	9.5		17.5	4.4		9.5		44.1	51.7		9.3	35	4.3	32.0	
9.5	34	7.1	8.0		9.2		59.3	1.9		9.2		40.9	22.3	K	9.5		56.7	10.5		9.0		12.3	15.0	
9.5		39.5	50.2		9.5	7	8.1	53.6		9.5	38	8.0	52.9	B	9.5	8	3.3	56.5		9.5		16.7	23.0	
9.2	35	23.4	52.8	b	9.5		55.7	18.8		4.5		29.7	35.1	Kb	9.5	9	3.2	27.9		9.5	36	1.1	47.4	
10pr.			29.26	3.13	10pr.			28.70	2.93	10pr.			28.22	2.69	10pr.			27.83	2.42	10pr.			27.46	2.11
			+	—				+	—				+	—				+	—				+	—

12.6 2 9.1 13.0 / Pr

1200 / Pr 2 6.9 11.7

1200 / Pr 2 5.1 16.5

11 / 6

9 / 4

2901—2960

15ᵐ +17°

m	′	″	′	
9.5	36	7.2	5.8	
9.5		30.7	55.4	
9.3		51.7	36.2	
9.5	37	20.1	49.8	
9.5		30.3	11.0	
6.2	38	7.9	44.2	K
6.8		12.0	12.4	K
9.0		14.8	81.2	K
9.2		59.5	7.7	
9.5	39	13.4	21.7	
9.5		14.2	26.8	
9.2		53.4	59.1	K
9.5	40	14.2	10.1	
9.0		55.3	18.9	
9.5	41	54.1	39.6	
9.4	42	0.8	3.6	
9.5		49.1	7.0	B
9.0	43	49.0	11.2	
9.0		53.4	57.3	Kb
9.5	44	20.2	44.2	
9.2		31.7	35.5	K
9.5		45.2	30.0	
9.1	45	23.5	14.5	b
9.4		24.7	21.1	
9.5		49.7	33.5	
6.5	46	22.9	50.7	K
8.7		26.1	4.2	
9.0		46.2	42.4	
7.8	47	36.0	25.8	Kb
8.7	48	17.9	39.3	K
9.5		23.6	43.1	
9.5		37.8	23.0	
9.5	49	4.1	52.2	
8.5		7.5	27.6	K
9.5	50	26.2	25.8	
9.0		29.6	52.0	K
9.0		34.0	16.0	
8.2		41.8	36.5	K
9.1		52.6	8.9	b
9.4	51	26.0	44.7	B
9.5		43.1	9.4	
9.5		43.7	40.4	
9.5	52	11.4	59.6	
8.9		22.0	51.1	
9.0	53	13.1	45.9	K
8.5		17.0	47.9	K
8.3		40.5	35.1	K
9.5		48.3	31.5	B
9.5		51.0	2.5	
9.3	54	18.5	37.1	Kb
9.5		20.1	59.2	
8.8		43.0	50.2	K
9.5	55	21.1	8.0	
9.0	56	31.1	22.2	K
9.0	57	39.0	28.4	
9.5	58	0.3	1.5	
9.5	59	15.5	43.2	
9.5		35.3	20.1	
9.2		40.0	43.3	K
9.2		43.4	47.4	K

	+	—
10pr.	27.19	1.82

2961—3020

16ᵐ +17°

m	′	″	′	
8.5	0	35.8	16.7	K
7.9	1	11.3	7.3	K
9.0		30.5	44.7	K
5.5		31.7	26.5	Kb
7.0		32.2	27.2	K
9.0		34.0	36.6	K
6.5	2	14.7	36.6	K
9.5		18.8	28.2	
8.0		34.2	46.1	K
9.5		54.0	16.0	
9.5		59.8	33.8	
8.5	3	6.3	10.5	
9.4		29.5	3.0	
9.5		30.8	6.6	
9.3		38.2	22.2	K
9.0		56.7	55.1	K
9.5		57.0	33.0	
9.5	4	16.0	3.7	
9.5		24.0	12.9	
9.1		32.3	9.9	
9.5		53.8	51.3	
6.1		54.8	2.7	Kb
8.0		58.5	21.0	K
9.5	5	15.2	37.5	
9.0	6	21.1	30.3	K
9.0		21.5	23.4	
9.3		23.8	57.1	
9.3		36.0	5.0	
9.3		47.5	48.6	
9.0	7	32.5	36.2	K
9.0		46.1	33.8	K
9.5	8	9.6	25.6	B
9.2		42.3	34.1	K
9.3		46.5	49.9	
9.5	9	14.1	23.4	
9.3	10	26.3	31.0	
9.0		52.8	33.0	K
9.3	12	15.8	40.0	
8.9		20.1	45.1	K
9.4		25.9	6.6	B
9.5		56.7	31.9	B
9.5	13	32.7	17.9	B
9.5		45.5	44.4	
9.5	14	10.8	43.1	
9.4		29.1	29.7	
9.5		58.7	52.6	
9.3	15	10.7	2.6	K
9.4		21.1	31.8	a
9.5		38.3	5.0	
9.1		40.5	29.6	K
8.2	16	22.4	43.9	K
8.2		37.7	48.7	K
9.0		49.1	15.3	K
9.4		54.0	54.6	
9.2	17	2.9	28.2	aB
9.3		35.1	50.1	
8.5		43.4	42.3	K
9.3		53.2	22.0	
8.4	18	4.4	59.0	K
9.4		22.2	13.7	

	+	—
10pr.	27.00	1.57

3021—3080

16ᵐ +17°

m	′	″	′	
9.5	18	37.7	31.6	
7.5		58.1	37.1	K
9.4	19	47.7	59.4	
9.4		52.7	22.5	
9.1		56.6	28.3	B
9.3	20	2.4	14.7	
9.0		16.4	55.5	B
9.3		43.7	53.9	
9.5	21	25.3	57.9	
8.5		39.1	48.4	Kb
8.8	22	4.8	5.1	K
9.5		11.4	33.3	
8.6		11.7	13.7	
9.5		20.4	27.1	
9.5		32.6	25.3	
9.5		49.1	35.0	
9.5		57.3	53.0	
8.5	23	1.0	47.4	
8.7	24	0.9	1.7	K
9.3		34.9	31.9	
7.8		56.1	49.4	K
8.5		59.1	31.3	K
9.3	25	29.2	36.7	K
9.4		56.8	4.7	
7.6		59.0	9.0	K
9.5	26	10.1	15.7	
9.4		10.2	9.8	
9.2		13.5	20.2	B
9.5	27	7.7	23.0	
9.3	28	4.6	3.7	
8.5		8.4	26.7	K
8.8		12.4	17.4	K
6.2		56.2	21.3	K
7.5		56.2	24.6	Kb
9.0	29	12.1	5.3	
9.5		36.0	52.9	B
7.6		39.4	46.6	K
9.5		53.5	53.2	B
*9.3	30	4.4	36.7	
*9.5		34.7	21.6	
9.4		38.0	49.7	Kb
9.2	32	15.4	28.1	
8.9		25.4	34.0	K
9.5		33.5	50.4	
9.5		44.1	14.6	B
9.5	33	9.0	58.7	
8.2		23.7	6.7	Kb
9.5		37.1	5.4	
6.8		44.3	59.8	K
9.2	34	8.1	54.8	K
8.9		40.4	31.3	B
9.3		46.3	12.6	
*9.5	35	8.4	31.1	B
8.5		16.5	37.1	K
8.3	36	8.3	24.7	K
9.5		8.6	32.9	
9.3		12.7	2.2	
9.5	37	30.4	48.5	
9.5		32.6	5.6	
9.4		50.5	9.6	

	+	—
10pr.	26.84	1.30

3081—3140

16ᵐ +17°

m	′	″	′	
8.3	38	15.3	18.9	B
9.2		20.6	54.9	
9.4		31.0	57.6	
9.4	39	33.9	35.8	
8.9	40	9.2	56.9	K
9.3		15.7	22.7	B
9.5		27.3	17.5	
9.4		44.7	46.7	
9.5		45.7	51.5	
9.4	41	2.6	13.2	
9.4		26.2	2.9	B
9.4		34.1	20.6	
6.8		56.4	23.9	K
8.8	42	0.9	13.7	K
9.2		17.9	15.8	
8.9		23.3	18.8	K
9.5		26.4	6.4	
9.1		28.5	40.5	
9.2		30.8	19.9	B
9.2		38.6	9.6	B
9.0	43	0.1	27.4	
9.5		18.3	40.1	
9.4		24.1	7.2	
8.8	44	18.8	50.5	K
9.4	45	2.4	39.6	B
9.5		24.9	56.7	
8.6		34.8	17.7	B
9.0		47.7	47.8	K
9.5	46	1.4	19.6	
9.5		16.1	47.0	
9.5		16.6	5.1	
9.5		31.0	32.5	B
9.0		46.8	28.1	K
9.5	47	11.5	33.2	
9.5		27.9	58.0	
9.1		51.1	18.4	
9.0		53.6	4.7	
9.1	48	22.4	7.6	
8.7		30.6	9.0	
9.3		36.8	55.7	
9.3		39.6	45.3	B
9.3		41.7	50.3	B
9.5		52.0	58.4	
9.5	49	12.4	18.5	
8.3		19.9	38.4	K
9.1	50	35.2	19.8	b
9.5		50.5	4.6	
9.5	51	1.1	15.4	
9.4		18.0	36.0	
9.2		40.4	12.0	
9.5		53.1	37.1	
9.4		56.2	7.2	
9.0	52	30.3	2.1	
8.9		33.2	31.1	B
8.0		34.0	44.0	K
7.2		38.4	54.6	K
8.4		50.8	23.0	K
9.5	53	49.2	9.9	
8.5		53.1	4.2	
8.5	54	5.1	9.2	K

	+	—
10pr.	26.72	1.06

3141—3200

16ᵐ–17ᵐ +17°

m	′	″	′	
9.3	54	51.7	19.5	
8.9	55	48.1	6.9	B
9.4		56.3	28.2	
9.1		58.5	22.1	
9.5	56	6.4	26.4	
9.3		14.7	53.9	
9.3		24.7	35.6	
9.4		41.6	56.8	
8.8		43.8	14.1	
8.4		45.5	51.3	
8.8	57	8.0	32.9	Kb
9.3		8.1	8.0	
9.3		8.1	4.8	
8.8		23.5	24.6	
9.4		50.0	3.7	
9.5	58	0.3	14.9	
9.5		15.2	15.5	
9.5		20.8	32.4	B
9.5		27.0	19.8	
9.5		35.4	4.3	
9.4		37.6	3.2	
8.5		50.9	1.2	K
9.5	59	23.0	26.4	
9.5		26.9	48.6	
9.3		32.2	9.4	K
9.5	0	12.5	39.3	
8.9		27.6	55.8	K
9.3		42.9	18.3	
9.5		45.7	15.7	B
9.5		47.4	42.8	
8.1		50.6	58.8	K
9.4		54.6	15.2	B
8.6	1	5.0	33.2	Rb
9.5		18.7	56.7	
8.5		38.5	25.9	L
9.5	2	30.4	46.2	
9.5		36.8	4.8	
9.2	3	28.8	59.8	
9.5		38.2	29.0	B
9.3	4	12.1	1.4	
9.0		32.0	50.3	K
9.0	5	3.2	21.5	K
9.5		42.1	54.0	
9.0		42.2	16.6	
9.5	6	13.9	55.5	
8.3		16.5	26.6	
9.4		22.4	57.8	B
8.8		54.0	22.9	Kb
8.8	7	11.5	50.7	K
9.0		12.3	26.5	K
9.5		17.4	8.6	
9.4		34.3	2.2	
9.2		39.9	13.9	B
9.5		46.5	23.3	B
9.4		49.2	10.6	B
7.5		50.5	15.0	K
9.5	8	5.6	54.7	
9.5		21.0	52.7	
9.2		27.0	48.0	K
9.5		33.9	42.5	

	+	—
10pr.	26.65	0.86

3059ᵃ				
9.6	30	28.3	58.3	B
3072ᵃ				
9.7	34	49.2	32.9	B

3201—3260

	17ᵃ	+17°	
m	′ ″	′	
7.0	8 43.3	58.1	K
7.7	9 9.9	59.6	K
9.5	24.4	59.0	
9.5	26.5	10.2	
8.8	28.3	2.8	
8.5	38.0	23.9	
9.5	53.7	47.2	
9.5	10 50.9	37.3	
9.5	59.8	55.0	
9.4	11 12.7	53.8	
9.5	20.0	32.5	
9.4	32.0	46.7	
7.5	32.7	16.4	K
9.2	34.8	46.0	*B*
9.5	35.3	45.3	
6.0	39.2	29.0	K
9.5	12 6.0	37.8	
9.4	10.4	34.2	B
9.4	27.0	40.5	
9.3	29.8	15.7	B
9.5	34.4	47.6	
8.8	34.9	41.8	K
9.5	13 2.0	43.1	
8.8	40.9	28.7	R
7.8	14 19.4	12.1	*Rb*
9.4	41.3	4.6	
9.5	15 30.1	2.8	
9.3	39.5	36.8	*b*
9.4	16 33.3	18.7	
9.5	40.4	17.4	
8.5	57.3	1.6	K
7.5	17 2.6	3.2	K
9.1	47.4	35.2	K
9.5	54.5	32.1	
9.5	18 16.4	21.8	
7.7	30.3	5.3	K
9.1	19 0.4	56.0	*Kb*
9.5	9.9	26.2	
9.5	18.6	56.3	
8.8	18.8	12.3	K
6.2	26.6	3.0	K
9.5	48.5	34.1	
9.1	56.3	58.6	
9.1	20 0.4	19.7	K
8.3	32.3	5.9	K
8.8	21 22.4	4.3	K
9.2	39.9	6.4	K
9.3	50.7	38.0	
9.5	22 8.2	55.7	
9.5	28.3	2.1	
9.3	35.0	40.7	
8.5	41.4	35.1	K
9.1	42.7	14.9	*b*
9.4	58.0	46.2	
9.3	23 23.5	15.0	K
7.0	24 11.7	37.9	K
9.3	26.8	41.0	B
9.1	35.0	59.3	K
9.4	45.2	20.8	
9.3	25 22.8	51.7	
	+	—	
10pr.	26.58	0.62	

3261—3320

	17ᵃ	+17°	
m	′ ″	′	
9.4	25 26.5	27.7	
9.5	35.5	1.0	B
9.3	46.5	2.2	B
9.5	54.7	51.5	
9.5	26 4.6	8.5	
9.3	10.4	30.1	
9.4	21.1	52.4	
9.5	24.6	3.8	
9.3	50.0	32.4	
9.5	27 8.7	55.5	
9.5	13.5	49.3	
9.5	28.2	37.0	
9.2	32.8	52.8	K
8.5	45.6	41.7	K
9.0	53.4	37.2	K
9.5	28 2.6	3.1	
9.5	14.9	20.1	
9.4	24.0	51.0	
8.0	29.6	54.5	B
9.4	47.1	47.5	
9.2	51.0	42.8	
9.3	53.0	19.4	K
9.5	29 7.9	6.0	
9.2	11.6	0.9	K
9.5	50.7	31.1	
9.5	53.0	44.2	
9.5	58.3	24.8	
9.4	30 8.9	32.5	
9.5	59.5	34.2	
9.5	31 23.7	8.5	
9.1	26.4	38.0	*Kb*
9.5	39.9	24.3	
8.5	55.1	55.4	K
9.4	32 17.2	15.0	
9.5	26.7	58.6	
9.5	50.2	20.1	
9.5	50.2	17.3	
9.4	51.7	14.6	B
9.5	53.5	42.5	
9.3	33 50.9	20.8	*a*
9.2	52.2	31.4	
9.4	34 13.2	31.3	B
8.9	28.2	20.0	
9.5	50.9	33.3	
9.1	35 0.6	18.5	B
9.2	6.4	49.2	*b*
9.4	8.3	28.0	
9.0	13.0	27.0	
8.0	14.4	5.2	L
8.5	41.4	7.1	K
9.5	47.7	10 6	B
7.0	50.8	18.3	K
9.5	36 1.4	39.7	
9.5	1.8	8.0	
9.4	8.6	6.2	
9.5	21.7	29.0	
9.5	26.5	28.8	
8.0	38.0	45.8	K
8.0	52.9	45.9	K
9.2	37 34.9	59.5	
	+	—	
10pr.	26.54	0.42	

3321—3380

	17ᵃ	+17°	
m	′ ″	′	
9.3	38 8.4	19.4	
9.5	34.0	27.0	
9.3	52.9	18.4	
9.5	39 11.0	25.9	
8.5	16.9	16.6	B
8.0	18.2	46.9	K
9.5	22.1	19.5	
9.3	39.5	56.5	
9.5	46.1	2.1	
9.5	51.0	21.5	
7.9	40 5.4	39.0	K
8.2	33.5	57.2	K
9.5	34.5	33.9	
5.5	44.9	47.2	K
9.3	41 6.0	20.8	
8.8	21.4	28.7	
9.4	36.5	27.3	
9.4	36.6	5.7	
9.5	36.9	42.0	
9.4	53.4	39.3	
9.3	56.9	30.2	B
9.4	58.2	29.9	
9.5	42 2.0	33.2	
9.0	8.4	11.5	
9.1	35.4	51.7	
8.7	51.9	39.7	K
9.5	58.0	30.7	
9.5	43 26.1	22.3	B
9.1	32.9	59.8	K
9.5	54.0	45.8	
9.5	44 20.1	46.0	
9.1	22.4	51.9	
9.5	39.4	8.5	
9.4	48.2	42.5	
9.5	52.6	8.2	
9.5	53.9	2.5	
9.2	54.5	26.3	
9.3	45 3.4	31.5	
9.5	18.5	26.7	
9.2	30.4	56.3	
9.5	51.0	26.4	
9.2	55.9	10.0	
8.6	46 2.6	16.5	
9.0	11.1	16.1	
8.0	26.9	52.8	K
9.5	43.0	13.8	
9.5	44.4	20.0	
9.3	49.0	1.6	*Kb*
9.0	47 0.5	34.2	K
8.9	17.6	4.5	
9.3	47.2	6.8	
9.5	50.9	23.5	
8.7	55.4	55.8	
9.0	48 15.5	38.7	K
9.3	19.0	39.4	
9.5	23.9	4.1	
9.1	31.6	11.0	K
9.5	34.5	53.8	
9.4	49.0	18.1	
9.4	49 10.0	35.3	
	+	—	
10pr.	26.52	0.23	

3381—3440

	17ᵃ—18ᵃ	+17°	
m	′ ″	′	
9.3	49 27.1	15.0	
9.4	33.2	53.9	B
9.4	39.1	48.5	
9.3	40.4	19.8	
9.5	41.2	13.6	
8.9	50 11.9	48.2	
9.3	40.9	8.8	
9.4	45.0	25.3	
9.3	51 6.4	28.0	K
9.0	15.9	7.3	
8.5	31.9	25.7	K
9.4	36.2	59.6	
9.5	52 12.5	12.3	
9.5	31.4	36.6	
9.5	35.5	29.0	
9.5	55.9	48.2	
9.5	53 19.6	42.5	
8.3	58.3	44.0	K
9.5	54 0.0	50.7	
9.0	0.4	25.7	K
7.5	5.3	7.3	K
9.3	11.6	29.6	K
7.7	16.5	11.2	K
8.4	19.3	35.4	K
9.4	26.9	0.5	
9.5	45.0	24.5	
9.0	55 23.0	12.9	K
9.5	24.7	55.8	
9.5	28.8	38.0	
9.4	32.9	52.8	
9.5	45.9	51.9	
9.5	57.3	3.8	
9.5	56 18.0	58.7	
8.5	20.3	44.8	K
9.3	36.7	16.3	
9.5	47.8	10.8	
9.0	49.0	28.0	
8.3	52.8	37.2	K
8.9	57 23.7	39.8	K
9.4	45.9	58.3	
9.4	50.8	13.9	
9.5	58 6.1	58.5	
9.5	7.6	17.6	
9.5	19.3	2.9	
9.5	38.2	38.7	
9.1	40.8	59.7	
8.2	43.9	5.6	K
9.2	48.2	37.7	
9.5	49.0	38.0	
9.5	57.6	4.3	B
9.5	59 2.8	19.7	
9.2	8.4	12.8	B
8.9	13.5	0.1	B
9.4	24.8	42.6	
9.5	26.2	38.3	
9.4	40.9	47.4	B
9.1	47.0	41.5	
9.0	54.5	12.0	
9.5	0 14.9	55.1	
9.5	25.4	21.3	
	+	—	
10pr.	26.50	0.06	

3441—3500

	18ᵃ	+17°	
m	′ ″	′	
8.8	0 25.5	27.9	
9.5	44.3	11.7	
9.0	46.1	52.5	R
9.2	53.0	26.8	
9.5	55.1	41.0	
9.5	1 0.4	50.0	
9.4	2.5	32.5	
9.5	12.0	3.0	
9.3	19.3	16.0	
9.5	36.9	52.4	
9.5	45.1	52.1	
9.1	46.5	12.9	*b*
9.1	47.0	22.8	
9.5	48.9	46.4	
9.5	49.0	26.3	
9.4	54.8	55.0	
9.4	2 1.8	1.5	
8.6	19.3	35.8	K
8.7	38.8	32.2	K
9.1	49.2	29.3	
9.4	52.0	7.2	
9.5	3 2.3	10.7	
8.6	7.8	26.1	K
9.5	25.9	40.2	
9.5	38.0	21.2	
9.0	44.7	2.4	
8.5	54.9	22.5	K
9.5	4 6.1	0.2	
9.5	23.9	37.2	
8.4	54.6	11.4	K
9.5	56.4	26.3	
9 5	5 3.8	41.8	
9.4	24.2	17.7	
9.5	27.8	59.8	
8.8	40.9	26.5	
9.1	43.4	9.4	K
9.5	50.7	27.1	
8.7	50.7	45.7	
8.8	53.6	16.0	
9.0	6 1.0	56.0	
7.5	9.9	59.6	L
9.2	14.6	0.8	K
9.4	20.1	22.3	
9.5	29.0	20.0	
8.7	32.0	0.4	K
9.5	36.9	37.3	
9.3	41.6	14.1	
9.4	42.8	52.7	
9.5	7 9.2	56.6	
9.5	9.4	37.7	
9.5	14.2	55.8	
9.5	18.2	56.8	
9.2	20.1	44.1	K
9.5	43.0	16.9	
9.5	51.7	49.7	
9.2	8 20.7	58.6	
8.5	21.4	37.0	*Kb*
9.5	48.0	4.3	
9.4	48.6	56.4	
8.5	52.9	4.1	
	+	+	
10pr.	26.50	0.07	

m	18ª	+17°	
	3501 – 3560		
9.1	9 2.3	33.1	
9.4	4.1	39.7	
9.3	11.6	43.0	
9.4	24.5	57.8	
9.4	28.1	26.4	
9.3	29.5	25.0	
9.5	34.7	8.7	
9.5	37.7	5.0	
9.5	42.9	58.8	
9.5	50.1	20.5	
9.5	53.3	16.6	
9.0	55.0	28.5	
9.3	10 7.5	49.6	
9.3	13.4	2.4	
9.4	19.8	41.4	
9.5	29.9	37.7	
9.4	11 6.8	12.0	
9.4	13.0	6.7	
9.5	29.6	12.5	
7.6	31.7	55.0	Kb
9.5	53.2	14.9	
9.3	12 8.3	56.1	
9.2	10.5	2.0	
9.3	28.7	55.4	
9.0	29.9	31.9	
8.7	38.0	25.1	
9.2	13 16.4	19.6	
9.3	20.5	1.9	
8.6	24.0	8.8	R
9.5	29.3	58.3	
9.1	33.1	50.0	b
9.5	48.2	22.8	
9.3	48.4	16.4	
8.9	48.6	30.1	
9.4	56.5	20.7	
8.2	14 19.6	19.7	B
9.5	22.4	54.4	
9.5	31.5	31.9	
9.5	45.0	57.4	
9.5	48.0	27.4	
9.4	58.8	38.7	
9.0	15 2.3	5.8	
9.3	3.7	14.8	
9.5	38.4	41.0	
9.3	40.0	54.5	
9.5	40.0	52.3	
9.4	42.6	37.5	
9.4	59.5	8.0	
9.5	16 4.3	11.6	
9.2	6.4	24.8	
9.2	6.9	32.8	
9.5	18.8	58.6	
9.5	19.3	46.7	
9.5	20.6	0.5	
5.2	24.5	45.0	R
9.3	27.3	47.0	
9.2	34.2	3.9	
9.4	43.1	51.0	
9.5	43.5	56.3	
9.0	46.3	58.1	K
	+	+	
10pr.	26.51	0.20	

m	18ª	+17°	
	3561 – 3620		
8.6	17 3.8	2.9	K
9.4	12.7	12.6	
9.5	13.6	35.2	
9.1	19.2	40.1	
8.8	30.5	9.6	K
9.3	38.5	49.6	
9.1	39.5	26.5	b
9.3	58.7	17.6	
9.5	18 11.3	38.7	
9.0	18.2	46.4	K
9.5	29.8	21.4	
9.5	43.5	45.5	
9.5	19 8.5	21.9	
9.4	24.6	10 8	
9.1	37.0	52.5	
9.5	40.9	59.7	
9.4	43.7	6.3	
9.5	20 19.7	32.8	
9.4	22.6	55.2	
8.7	33.5	38.9	R
9.5	40.6	30.2	
8.3	57.9	26.0	
9.3	21 4.5	14.5	Kb
9.5	11.6	34.9	
9.4	23.3	17.7	
9.4	30.8	35.9	
8.3	31.5	57.3	
9.3	34.3	7.7	
9.1	52.7	48.4	
9.4	57.6	12.4	
9.2	22 3.2	58.3	K
9.5	20.8	29.2	
9.1	20.8	22.1	
9.0	27.1	41.3	
6.5	59.0	53.4	K
9.0	23 6.6	41.7	
8.9	8.3	28.0	
8.0	13.1	55.1	K
8.8	17.7	56.3	K
8.6	20.0	19.9	
7.7	21.8	30.8	L
9.3	41.3	37.9	
9.0	24 13.1	2.8	K
9.5	24.5	4.7	
9.5	26.4	31.0	
9.5	31.2	26.9	
9.5	54.9	6.5	
9.4	25 3.6	59.4	
9.5	12.5	19.6	
9.5	22.8	4.4	
8.8	26.4	25.6	K
9.5	38.0	27.9	
9.3	42.1	47.4	K
9.5	47.3	19.0	
9.4	57.2	14.6	
8.8	58.1	17.1	
8.4	58.7	10.6	K
9.0	59.2	14.1	
8.7	26 9.3	59.1	K
9.5	20.0	39.0	
	+	+	
10pr.	26.52	0.32	

m	18ª	+17°	
	3621 – 3680		
9.5	26 20.5	35.2	
8.5	26.0	12.1	K
8.7	33.1	22.4	
9.3	45.8	22.7	
9.5	47.2	46.3	
9.2	27 11.0	52.0	
7.5	22.0	37.3	R
9.5	28.8	26.3	
9.5	37.9	5.1	
9.5	39.2	24.7	
9.3	42.8	10.6	
9.5	49.6	54.7	
9.5	51.2	30.2	
8.3	28 2.7	37.3	
9.5	2.8	6.4	
9.5	4.7	14.1	
9.4	8.0	54.2	
8.7	24.3	47.5	
9.1	24.5	28.4	
9.5	43.0	19.6	
9.5	29 9.4	53.7	
9.5	24.8	17.2	
9.4	30.5	3.0	
9.5	31.0	55.7	
9.2	30 0.7	34.5	
9.5	6.8	0.3	
9.3	7.1	31.5	
9.1	8.5	25.0	Kb
9.5	23.8	28.0	
9.5	25.1	25.2	
8.6	28.0	55.1	K
9.3	28.2	57.9	
9.2	36.1	41.5	
9.5	36.6	44.8	
9.5	37.0	50.4	
9.5	40.1	16.0	
9.2	53.2	50.0	K
9.5	54.5	31.1	
9.0	54.7	43.7	
9.3	31 1.9	46.7	
9.5	2.8	34.4	
9.5	3.0	55.4	
9.3	40.7	45.6	
9.5	41.2	47.0	
9.4	42.9	46.8	
9.5	45.8	18.5	
9.2	47.9	53.3	K
9.5	49.4	57.7	
9.0	32 16.2	15.0	
9.0	16.9	45.1	
9.5	41.0	34.0	
9.5	42.8	12.0	
8.0	49.2	57.1	K
9.5	59.3	27.0	
9.5	33 8.8	21.5	
9.5	11.5	17.6	
9.0	15.0	52.9	K
9.4	20.1	10.8	
7.7	29.1	28.3	L
9.5	39.7	4.5	
	+	+	
10pr.	26.54	0.45	

m	18ª	+17°	
	3681 – 3740		
9.2	33 50.2	1.4	b
9.5	56.3	59.5	
9.3	34 22.4	32.5	
9.5	24.5	54.4	
9.5	35 0.9	0.7	
8.0	11.8	44.9	K
7.5	13.0	33.0	K
9.5	13.5	53.9	
9.5	39.2	4.1	
9.5	52.0	45.6	
7.5	36 11.6	35.0	K
9.0	17.1	30.3	
8.2	24.8	30.4	K
9.4	32.5	50.5	
9.4	38.5	20.4	a
9.5	39.9	11.9	
7.8	41.5	55.6	L
9.5	41.9	46.4	
9.0	49.2	20.0	
9.5	52.4	4.9	
7.2	53.1	21.0	K
9.3	58.1	29.8	a
9.5	37 10.2	32.6	
9.4	20.8	13.5	
9.5	35.9	3.9	
9.5	44.7	44.1	
9.5	38 10.9	51.4	
9.5	11.8	12.1	
9.3	16.5	5 6	
9.3	21.1	22.9	
9.5	41.2	45.1	
7.8	42.9	49.3	L
7.3	53.6	34.9	L
8.9	53.6	3.2	
9.5	39 24.4	52.6	
9.5	40 11.7	59.7	
9.5	59.9	2.0	
9.5	41 16.0	57.4	
9.1	34.0	14.6	
9.5	34.7	27.7	
9.5	40.7	0.7	
9.1	48.0	56.0	
8.9	53.2	46.5	
9.5	59.5	2.4	
9.5	42 8.0	29.1	
9.5	8.1	18.8	
9.5	21.3	47.2	
9.5	27.9	26.9	
9.0	29.7	17.8	K
9.2	34.5	0.4	
9.4	35.9	23.7	
9.3	57.7	15.1	
9.4	43 12.6	31.5	
9.5	25.7	44.7	
9.5	29.6	29.5	
9.4	33.8	23.6	
9.4	39.2	13.6	
9.5	43.0	15.0	
9.1	51.2	37.4	b
9.5	59.4	56.7	
	+	+	
10pr.	26.57	0.56	

m	18ª	+17°	
	3741 – 3800		
9.2	43 59.8	49.8	a
9.4	44 19.2	44.0	
9.3	32.0	59.9	
8.8	41.5	50.1	
9.4	54.8	6.1	
8.5	56.5	10.8	
9.3	45 10.0	29.9	
9.5	17.2	21.8	
9.5	21.0	55.5	
9.5	21.2	26.5	
8.9	24.4	53.2	
9.5	24.6	21.7	
9.3	30.1	58.6	
9.1	48.7	17.3	
8.8	46 2.0	19.7	
8.8	2.5	0.6	K
9.1	13.7	27.4	
9.3	16.6	36.7	
9.5	19.5	57.6	
9.5	30.3	16.4	
8.4	32.1	10.5	K
9.2	35.2	52.2	
9.0	53.9	5.7	K
8.0	47 3.9	50.3	K
9.5	12.8	21.7	
9.4	25.1	33.7	
9.5	32.9	30.3	
9.3	45.0	18.3	
9.0	59.3	26.3	
9.4	48 7.4	27.6	
8.5	9.5	59.8	
9.1	40.7	6.7	b
9.3	57.7	3.3	
9.3	59.3	28.8	
9.3	49 2.0	42.5	
9.5	8.4	5.1	
9.5	25.6	55.7	
7.0	39.2	48.7	K
5.9	42.4	55.8	K
8.7	47.6	46.5	K
9.5	48.8	1.3	
9.3	50.3	24.1	
9.3	55.4	39.1	
9.5	58.6	6.5	
9.0	59.5	27.7	
9.5	50 13.1	2.8	
9.3	15.8	37.3	
9.1	23.0	36.1	
9.2	56.4	29.2	K
9.3	58.1	1.5	
9.5	51 2.0	6.8	
9.3	2.0	9.8	
9.4	10.2	39.0	a
9.3	10.5	44.6	
8.4	19.4	54.6	
9.5	22.3	59.5	
9.3	24.1	47.3	K
9.4	26.6	39.3	R
5.8	48.3	10.2	K
9.2	52 6.2	43.4	
	+	+	
10pr.	26.59	0.69	

3801—3860

	18ʰ—19ʰ	+17°	
m	′ ″	′	
9.5	52 23.0	5.8	
9.3	36.0	3.3	
8.7	38.5	27.6	
9.2	39.1	37.5	
8.3	41.7	58.3	
9.5	57.8	46.7	
9.4	53 17.7	32.2	
9.5	23.5	12.0	
9.3	33.4	34.5	
9.1	34.2	49.5	
9.1	36.8	28.5	
9.4	41.9	8.9	
9.3	49.8	19.4	
9.5	50.9	11.7	
9.5	52.0	52.2	
9.5	59.3	21.6	
8.6	59.8	49.0	
8.9	54 28.2	1.3	K
9.5	34.1	16.6	
9.5	43.6	30.7	
8.8	54.0	11.6	K
9.5	55 6.5	54.8	
9.1	8.5	24.8	
9.5	13.6	15.7	
9.5	18.0	6.4	
9.5	24.9	6.7	
9.5	26.3	35.2	
9.2	56 2.8	47.9	K
9.4	14.6	47.4	
9.2	25.8	57.1	
8.5	26.6	9.9	
9.5	36.2	54.0	
8.7	38.4	37.2	R
9.2	49.3	14.6	
9.5	54.5	45.9	
8.3	58.4	38.1	
9.0	57 4.2	46.7	
6.8	6.7	4.7	K
9.5	10.7	28.0	
9.4	10.9	57.1	
9.5	21.8	11.6	
7.3	42.1	20.5	K
9.3	45.3	56.0	
9.3	54.6	38.9	
8.1	58 6.4	28.7	L
9.5	11.8	22.6	
9.5	15.2	0.8	
9.5	43.8	57.4	
9.5	50.0	21.3	
9.3	59 6.0	51.0	
9.4	7.7	52.3	
9.5	38.9	27.8	
9.5	40.8	34.9	
9.3	48.6	48.0	
9.5	0 8.5	26.0	B
9.5	10.4	49.8	
9.4	21.4	26.0	B
9.5	21.7	0.9	B
9.5	33.1	55.6	
9.0	42.0	40.2	B
10pr.	26.63	0.82	

3861—3920

	19ʰ	+17°	
m	′ ″	′	
9.5	0 48.2	13.5	
9.5	1 0.0	0.7	
9.5	2.8	21.4	
9.4	5.5	46.6	
9.5	16.1	18.7	
9.4	27.7	33.0	
8.1	30.0	30.7	K
9.5	42.2	33.4	
9.5	2 24.5	56.3	
9.5	31.9	35.9	
9.5	44.4	12.9	
9.5	45.4	5.4	
9.5	3 30.9	24.8	Rb
9.5	32.6	12.9	
9.4	37.4	56.2	
9.3	43.4	36.3	
9.3	48.8	32.6	R
9.4	52.9	1.0	
9.2	59.4	29.8	R
9.0	5 10.5	52.5	
8.0	16.9	38.0	K
7.7	21.6	50.6	K
8.2	24.8	54.5	K
9.3	33.6	52.8	
8.3	45.5	48.3	K
9.5	6 0.2	33.8	
7.5	3.7	46.0	K
9.4	22.0	2.4	B
8.8	28.3	21.2	
8.4	32.0	15.9	
9.3	42.8	55.8	
9.3	47.2	25.3	
8.8	55.7	6.1	
9.3	7 44.2	46.5	B
9.0	47.8	15.6	
9.4	57.3	28.0	R
9.5	59.5	3.6	
9.4	8 15.8	9.4	
9.5	27.3	48.6	
8.5	31.5	44.7	
8.9	42.3	27.5	
9.4	44.6	55.5	
9.5	56.5	18.0	
9.4	9 1.0	6.7	
9.3	3.1	23.7	B
9.1	9.5	26.9	
9.5	14.2	23.6	B
9.3	25.7	25.2	
9.5	38.8	49.1	
9.5	54.7	34.9	
8.5	57.0	17.1	K
9.5	59.8	27.7	
9.5	10 22.3	9.8	
9.5	37.2	38.6	
9.2	11 13.3	25.3	
9.3	24.8	10.1	
9.0	26.7	33.2	
9.4	28.8	12.0	
9.4	41.4	3.6	
8.8	12 1.9	27.7	R
10pr.	26.68	0.96	

3921—3980

	19ʰ	+17°	
m	′ ″	′	
9.5	12 5.1	56.0	
9.4	11.4	2.1	
8.8	18.8	12.4	K
8.5	20.2	20.3	
8.3	24.1	48.8	L
9.5	26.2	5.5	B
9.2	30.9	9.3	
8.8	13 3.1	51.2	K
9.5	14 5.0	28.0	
8.6	6.5	0.1	K
9.5	17.0	5.4	
9.4	17.3	0.1	
9.3	23.0	55.9	
8.7	28.3	54.4	
9.1	39.5	35.4	B
9.5	45.8	42.1	
9.4	49.7	7.8	
9.0	58.8	28.0	
9.5	15 11.1	59.4	
var	13.3	23.2	
9.5	16.0	18.0	
9.4	27.8	41.4	
7.0	36.2	28.7	R
9.5	16 34.2	2.9	
9.4	34.2	55.5	
9.0	17 28.8	7.4	
9.4	31.2	21.4	
9.3	34.1	48.7	a
7.9	37.7	42.4	L
9.5	38.0	54.1	
9.3	48.8	47.5	a
9.4	59.8	3.1	
9.5	18 5.9	0.5	
9.5	6.8	31.0	R
9.5	10.8	27.4	
9.0	36.4	1.7	R
8.8	41.8	5.6	K
9.3	59.7	5.8	
9.5	19 0.2	5.0	
9.2	0.7	24.5	
9.4	2.7	50.2	B
9.0	17.8	42.5	
9.5	22.8	55.1	B
9.3	30.2	56.9	B
9.5	33.3	56.2	
9.1	41.9	3.0	K
9.5	44.3	23.8	
9.5	45.1	50.7	
9.0	54.4	5.4	K
8.8	55.2	2.6	K
8.8	20 1.0	2.2	Kb
9.0	35.8	8.4	
8.9	37.9	0.4	
8.9	59.0	54.2	
8.3	21 35.2	20.8	K
6.5	37.8	33.4	K
9.4	48.6	0.5	
9.3	22 10.9	57.9	
9.5	26.2	4.4	
9.5	29.0	41.4	
10pr.	26.75	1.11	

3981—4040

	19ʰ	+17°	
m	′ ″	′	
9.5	22 53.8	43.3	
9.5	56.5	3.0	
9.5	23 1.2	53.6	
9.0	5.8	41.7	
8.4	6.2	16.6	R
9.4	56.4	57.7	
7.0	56.5	23.2	K
9.4	24 4.8	33.2	R
7.4	22.9	56.7	L
9.2	35.4	32.6	B
7.6	25 6.5	38.9	K
8.3	9.0	28.7	K
9.5	21.0	59.7	
9.4	42.8	35.6	
9.5	26 10.7	43.8	
9.5	12.9	5.5	B
9.4	13.8	24.9	
9.5	52.7	5.4	
9.1	27 2.1	55.0	
9.5	3.8	21.5	
9.5	6.0	24.6	
9.5	15.2	5.2	
8.9	16.1	1.0	
9.5	38.3	21.1	
9.5	45.0	45.9	
9.5	55.7	3.2	
8.4	28 0.3	40.3	L
9.3	3.9	41.2	B
7.0	8.8	50.2	L
9.5	17.7	27.6	
9.0	21.2	13.5	
9.5	29.8	54.3	B
9.5	38.1	57.5	
9.4	40.6	59.7	
9.4	49.2	11.9	
9.5	58.3	0.2	
9.2	29 3.8	41.3	Rb
9.5	5.2	2.8	
9.0	4.0	34.8	
9.2	20.0	2.6	
8.5	21.2	23.5	
9.5	54.8	19.4	
9.3	30 6.8	56.9	
8.5	18.2	21.0	
9.5	23.9	58.4	
8.3	26.8	30.0	R
8.3	27.3	42.4	B
9.5	33.8	57.0	
9.1	36.5	3.4	
9.3	31 4.0	6.5	
9.3	34.1	56.5	
9.3	40.0	52.1	
8.8	56.3	47.5	
9.5	32 11.2	41.7	
9.5	30.8	53.0	
8.5	43.7	28.0	K
9.2	33 4.3	42.9	R
9.0	19.7	14.9	
9.1	33.8	13.5	
9.3	35.2	22.1	
10pr.	26.81	1.26	

4041—4100

	19ʰ	+17°	
m	′ ″	′	
9.5	33 35.9	5.4	
4.3	37.2	41.6	Kb
8.2	41.0	33.8	K
9.3	53.8	8.0	
9.5	34 6.7	55.6	
9.4	27.3	18.0	
9.0	28.3	40.3	K
4.2	31.5	9.5	Rb
9.3	37.0	4.9	
8.9	40.0	58.2	K
8.4	56.4	50.8	K
9.5	35 10.8	56.9	
9.5	15.2	59.0	
*9.0	51.8	10.8	
*8.7	58.0	4.9	S
*9.3	36 5.5	26.8	
9.3	6.5	24.3	
9.3	16.8	22.0	
8.0	19.3	37.5	P
9.2	23.3	8.7	K
9.5	29.2	54.0	
9.2	40.4	14.9	
9.1	37 3.2	56.0	
9.3	17.3	33.4	
9.5	21.7	56.8	
9.3	21.9	53.1	
9.5	25.0	2.6	
9.2	40.2	34.8	
9.0	41.9	54.5	
9.5	44.5	48.6	
9.4	38 5.2	1.4	
9.5	20.8	39.3	a
9.4	27.3	23.7	
9.5	28.7	40.2	
9.5	39 2.8	34.1	
9.3	8.0	21.7	
9.3	32.3	50.6	
9.5	33.9	6.9	
9.0	37.8	39.3	P
8.8	52.8	36.9	
9.5	59.5	5.6	
9.5	40 0.0	2.0	
8.5	7.2	27.9	
8.9	14.3	12.5	K
9.3	16.2	17.3	
9.3	23.9	33.8	
9.4	29.0	53.8	B
9.5	29.4	2.8	
9.3	29.6	56.8	
9.3	32.0	51.2	B
9.2	36.3	51.4	B
9.2	36.5	57.6	
9.5	36.5	0.1	
9.5	50.8	40.0	
8.7	41 5.7	59.8	
9.5	20.8	44.4	
9.4	30.3	0.4	
9.5	32.3	17.9	
9.5	43.7	3.1	
9.4	47.8	53.1	
10pr.	26.88	1.38	

4054a
9.0 | 35 54.6 | 5.7 | a
4055a
9.5 | 36 0.2 | 8.2 |

4101—4160

m	19ᵐ ′ ″	+17° ′	
9.5	42 0.9	0.1	
9.5	10.8	12.8	
9.1	25.7	51.4	K
9.1	46.3	44.1	
8.7	48.8	17.2	
8.5	58.3	7.3	K
9.5	43 9.6	23.0	B
8.6	10.6	43.7	B
9.1	24.8	35.3	*a*
8.2	29.6	35.7	B
9.3	37.7	7.9	B
9.5	38.5	59.6	
9.1	40.9	4.4	
9.5	42.0	47.9	
7.2	44.5	21.2	K
9.4	47.8	11.2	
9.4	44 1.7	4.2	
9.5	11.6	3.1	
9.5	40.8	51.7	
9.5	58.9	59.7	
8.5	45 22.7	26.5	K
9.2	27.1	26.8	*a*B
8.5	27.7	28.6	K
9.5	45.2	27.5	
9.1	49.2	54.2	
9.5	50.3	59.4	
9.5	57.7	48.5	
7.8	59.0	4.6	*B*
8.0	46 25.6	27.2	K
8.8	30.0	57.3	
9.4	36.5	10.7	
8.9	41.3	59.1	
9.1	41.3	38.9	K
9.2	47.7	42.0	K
9.5	57.2	5.6	
9.5	47 12.2	0.0	*a*
9.0	15.8	34.8	
8.6	29.3	51.5	
8.5	33.2	34.1	K
9.2	42.0	21.1	
9.5	48 4.2	45.1	
9.0	10.0	8.8	
8.5	12.5	4.0	K
9.0	18.2	23.1	
*9.4	23.0	17.0	
*9.2	58.0	53.1	*a*K
8.3	49 1.8	48.9	K
8.5	16.5	42.4	K
8.0	31.0	31.4	L
9.3	31.3	44.2	*a*
9.3	40.9	5.6	
9.5	42.5	1.6	
9.4	55.0	14.5	
9.4	58.0	15.5	
9.5	50 0.2	22.0	
9.4	0.7	17.0	B
9.3	1.1	22.9	B
9.5	23.8	18.3	
9.0	26.3	26.9	
8.5	38.0	58.5	
	+	+	
10pr.	*26.95*	*1.60*	

4161—4220

m	19ᵐ—20ᵐ ′ ″	+17° ′	
9.3	50 58.3	46.5	
9.3	51 1.7	24.2	
9.2	4.5	13.9	*a*
9.4	8.2	53.8	
9.3	10.0	2.9	
9.0	21.8	14.9	
9.5	23.2	51.7	
9.1	28.4	28.9	
9.3	41.5	33.2	
9.5	56.3	14.8	
9.3	52 3.2	11.8	
9.5	15.8	29.4	
9.4	23.0	32.0	
9.4	34.7	33.7	
9.5	46.5	0.2	
9.5	47.4	20.0	
9.5	51.3	57.3	
9.5	53.0	52.2	
8.8	53 9.6	18.4	K
9.2	14.3	12.7	K
9.4	20.8	38.6	
8.1	23.3	56.7	*B*
5.8	30.4	7.2	K
9.2	35.1	6.0	
7.5	35.6	12.8	K
9.2	37.6	6.5	B
8.7	38.0	15.2	K
8.5	49.3	32.5	
9.0	54.8	24.4	R
8.5	54 2.9	26.9	R
9.0	24.8	40.0	
9.5	25.2	50.3	
8.8	27.1	58.9	
9.5	55 1.0	3.2	
9.0	19.6	41.8	
9.5	19.8	37.0	
8.2	39.1	7.2	K*b*
9.5	50.1	56.7	
9.5	50.1	40.4	
9.1	56 17.8	31.6	K
7.2	31.3	53.8	K
9.0	36.6	31.4	K
9.1	43.8	26.7	K
9.3	57 1.4	42.9	
8.6	5.3	56.6	K
7.2	41.3	19.1	L
9.4	43.3	18.3	
9.5	57.6	59.0	
9.1	58 12.1	39.4	
8.6	12.1	32.1	L
9.3	20.0	18.8	
9.4	33.6	36.0	
8.0	34.3	27.4	L
9.3	43.9	56.7	
8.5	59 11.8	10.5	K
8.5	23.4	50.2	*B*
9.3	42.6	28.0	
9.5	58.3	55.9	
9.5	0 2.2	3.0	
9.5	18.0	18.9	
	+	+	
10pr.	*27.02*	*1.60*	

4221—4280

m	20ᵐ ′ ″	+17° ′	
9.3	0 18.3	28.9	*a*
9.2	23.1	4.5	K
9.2	24.5	10.4	
9.0	26.4	30.6	
8.8	59.0	14.0	K*b*
9.3	1 0.5	35.6	
9.5	27.7	12.2	
9.2	29.0	14.7	K
9.5	49.0	37.6	
9.0	2 6.4	54.1	K
9.5	10.0	13.9	
9.4	24.0	39.8	
8.8	42.1	55.3	K
9.0	47.3	55.7	K
8.2	3 2.5	42.0	K
9.1	5.0	24.0	R*b*
8.5	28.8	48.4	K
9.1	41.0	37.4	
9.4	42.0	27.5	
9.5	4 2.6	9.8	*a*
9.3	8.5	5.5	K
9.5	13.6	4.3	
9.5	50.9	38.0	
9.5	53.5	17.4	
9.5	53.8	3.1	
9.1	5 13.1	52.2	
9.2	15.7	51.8	
8.8	47.0	55.2	K
9.5	57.8	22.7	
9.5	6 12.3	39.6	
9.4	39.3	7.0	
9.0	40.3	25.5	K
9.4	46.3	53.7	
8.9	51.5	27.2	K
9.1	52.5	36.4	
~~9.0~~	~~50.6~~	~~47.0~~	
8.0	7 9.0	44.2	K*b*
9.3	13.9	10.7	
9.5	24.4	6.1	
8.0	32.8	46.1	K
7.7	33.6	22.7	K
9.5	56.5	9.7	
9.5	57.6	19.1	
9.5	8 0.3	43.6	
9.5	3.1	36.2	
9.3	45.9	0.1	
9.3	55.3	38.0	
9.5	9 1.4	10.0	*a*
9.5	1.8	7.8	
9.0	32.8	5.8	
8.7	47.6	19.8	
8.6	57.0	8.1	
9.1	58.0	52.5	
9.5	10 5.0	31.5	
8.4	16.0	22.8	
7.8	25.2	54.8	K
9.5	28.5	16.9	
9.5	36.7	16.0	
9.5	11 1.5	21.7	
9.5	4.5	16.8	
	+	+	
10pr.	*27.13*	*1.75*	

4281—4340

m	20ᵐ ′ ″	+17° ′	
9.5	11 23.5	21.7	L
7.5	41.3	53.2	
9.0	45.3	38.7	
9.5	46.3	50.7	
9.4	12 1.0	9.0	
8.9	3.3	53.6	
8.8	4.0	37.2	K
9.5	44.0	59.4	
9.0	47.3	15.0	
9.5	13 19.8	56.6	
9.5	26.2	4.0	
9.3	26.4	40.9	
9.0	43.5	18.2	
6.2	47.0	19.9	L
9.5	14 22.8	27.2	
9.5	34.5	11.2	
8.9	40.2	19.7	L
8.8	50.9	50.4	
8.8	52.2	55.7	
9.5	15 5.0	26.1	
9.5	13.1	32.5	
9.1	30.5	13.8	
9.5	45.0	9.0	
9.5	52.7	7.2	
9.4	58.7	5.2	
9.5	16 12.2	43.4	
9.5	19.2	18.6	
9.0	20.5	51.8	
9.2	24.2	4.3	
8.6	42.8	54.5	K
9.5	55.2	51.5	
9.5	56.9	6.6	
9.5	17 0.0	26.9	
9.5	10.0	18.8	
9.5	10.0	12.9	
9.2	35.5	16.5	K
9.5	40.9	6.0	
9.5	18 21.5	4.6	
9.5	42.3	25.9	R*b*
9.5	44.5	51.0	
9.3	19 12.9	13.7	K
9.0	23.5	12.8	K
9.5	24.2	43.2	
9.5	35.2	40.0	
9.5	20 11.5	20.1	
9.5	22.8	58.3	
9.5	44.4	33.0	
9.5	50.5	16.9	
9.4	54.5	49.0	
9.4	21 4.2	2.9	B
8.9	9.6	36.0	
9.2	18.3	36.5	*a*
9.5	30.2	45.9	
9.0	22 5.3	54.1	K
8.3	48.0	58.0	K
9.5	23 23.2	13.1	
8.2	27.9	5.1	K
9.5	37.2	15.5	
9.5	49.5	34.2	
8.5	55.1	8.7	K
	+	+	
10pr.	*27.24*	*1.88*	

4341—4400

m	20ᵐ ′ ″	+17° ′	
9.5	24 4.8	33.5	
9.5	33.2	8.3	*a*
9.0	50.8	6.2	
9.5	25 0.7	53.3	
9.5	10.5	59.2	
9.5	24.3	24.1	
9.0	26 15.5	32.4	
9.5	18.8	20.9	
9.3	38.7	12.9	
9.5	39.0	8.8	
9.3	53.0	23.9	
9.3	55.2	51.2	
9.2	27 7.8	1.7	K
9.0	20.8	19.6	*B*
6.7	25.4	41.5	B
9.1	30.5	52.1	
8.2	38.8	20.6	*B*
9.5	55.5	45.9	
9.4	28 26.0	10.6	
9.4	28.5	20.4	
9.5	35.7	35.9	
9.5	29 8.8	18.4	
8.8	43.2	18.3	
9.3	30 3.5	56.7	
8.8	4.8	45.9	
9.5	55.3	13.1	
~~9.1~~	31 4.0	46.6	
9.1	8.9	34.9	
9.4	10.2	16.9	
7.0	18.0	45.5	*B*
9.3	22.2	45.6	*a*B
9.5	22.5	11.9	
9.3	32 22.5	22.9	
8.5	31.2	21.4	
9.1	33 35.7	1.0	K
9.5	46.8	32.1	
9.5	34 4.2	25.1	
6.8	15.5	4.1	K
9.5	17.2	18.9	
8.5	34.5	40.8	
9.1	37.8	30.8	
6.5	35 19.5	2.0	K
9.0	23.2	49.7	K
9.5	53.2	0.0	
8.8	36 0.7	52.1	
9.2	9.1	1.3	K
9.5	41.8	43.9	
9.5	37 14.0	0.6	
8.4	19.9	3.2	P
9.4	37.1	27.0	
9.5	45.8	9.4	
9.5	47.5	31.0	
9.1	49.7	52.1	
9.5	50.5	57.6	
9.5	38 3.5	45.5	*a*
9.4	10.0	14.4	
8.3	32.1	46.3	*B*
9.4	32.4	33.2	B
8.8	34.2	30.0	
9.2	44.9	38.5	
	+	+	
10pr.	*27.41*	*2.05*	

4145 a

9.1	48	54.0	53.0	*a*K

4401–4460					4461–4520					4521–4580					4581–4640					4641–4700				
	20ᵐ		+17°			20ᵐ–21ᵐ		+17°			21ᵐ		+17°			21ᵐ		+17°			21ᵐ–22ᵐ		+17°	
m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′		m		′ ″	′	
var	38	49.8	34.0	*B*	9.5	49	35.8	45.7		9.5	5	31.0	1.6		9.5	18	50.6	58.7		9.2	43	13.7	16.0	
9.5	39	15.6	49.7		9.5		51.3	4.6		8.5		55.0	32.7	R	6.8	19	21.0	26.5	B	9.0		21.2	25.7	
9.1		20.6	40.4	K	9.5		59.3	44.8		9.0	6	15.1	25.8		9.5		25.1	35.2		9.5	44	1.1	43.7	
9.5		26.2	35.8		9.5	50	11.8	7.1		9.0		20.5	43.4	K	9.5		32.5	23.0	B	9.2		29.6	48.9	K
9.1		41.2	23.3	K	9.5		19.5	18.5		9.4		23.4	55.9		9.5		49.6	55.0		8.7		49.8	11.8	K
9.5		57.6	43.3		9.5		19.5	25.0		9.5		35.0	40.0		9.5	20	35.5	59.1		9.4		53.1	51.3	
9.5	40	2.5	3.7		9.5		24.8	27.5		8.7		51.5	24.8	K	9.5		38.2	23.9		9.3	45	54.0	4.4	
9.5		17.1	4.3		8.7		33.9	54.1	K	7.3	7	39.2	3.8	K	9.2	21	1.7	10.0		9.2		55.7	37.5	
9.2		35.6	26.0	K	9.0		33.9	47.9		9.4		39.6	45.2		9.3		7.2	4.4	B	9.2	46	7.4	45.0	
9.5		37.8	0.3		8.5		38.2	37.8	L	8.3	8	0.5	13.0	K*b*	9.5		7.6	21.5	K*b*	8.0		11.1	13.5	L
9.5		44.3	42.8		9.5		38.2	10.5		9.3		27.1	26.5		9.0		57.6	32.9	R	9.4		57.1	2.0	
9.2	41	2.2	52.1		8.3		46.8	45.7	K	8.5		40.0	33.1	K	6.5	22	13.1	16.6	K	8.4	47	12.4	22.6	R
9.4		5.4	22.0		9.4		52.5	22.5		9.5		47.3	50.6		9.5		36.2	9.4		8.3		12.4	43.4	
9.3		10.2	4.9	K	9.0	51	3.6	31.2	R	9.3		48.1	43.4		7.2	23	21.4	57.3	L	8.6		14.0	22.4	R
9.3		11.5	15.3		~~9.0~~		~~40.0~~	~~4.2~~		8.8	9	10.6	19.4		9.0		21.6	39.5		9.3		19.2	35.7	
9.3		12.0	10.1		8.8		45.8	37.8	K	9.5		28.0	29.0		9.2	24	27.6	57.5		8.5		22.9	44.4	
9.5		15.0	20.7		9.1	52	4.0	49.2	B	9.5		35.6	55.0		9.2	25	1.7	9.6		7.5		24.2	19.8	R
9.5		32.9	6.2		7.5		11.6	17.0	L	9.5		52.6	5.2		8.0		9.2	47.5	K	9.5		42.6	19.5	
9.1		39.6	50.4	R	8.9		11.9	7.1		9.5		56.1	58.2		9.0		39.7	2.2	K	8.5	48	22.7	19.8	K
9.5		50.9	54.9		8.8		19.5	33.3	K	9.5	10	39.0	18.2		9.4		40.0	11.0		8.7		43.0	13.2	K
8.0		57.6	19.0	K	9.4		19.8	44.8		8.9	11	10.8	25.2	K	8.5		44.8	58.2	K	9.5		43.0	49.6	
8.2	42	7.2	19.1	K	9.5		56.5	23.9		9.1		11.5	54.4	K	9.2		57.7	20.1	K	9.5		43.2	19.1	
9.5		33.5	30.0		8.8	53	1.3	36.8	K	7.2		11.6	2.2	K	8.7	26	14.5	5.0	K*b*	9.0	50	9.0	29.8	
8.8		38.8	23.1	K	9.3		16.7	9.5	K	9.5		26.8	30.8		9.2	27	37.2	40.2	K	8.8		22.9	5.6	K
8.8		41.7	56.7	K*b*	9.2		21.2	2.7		9.5		28.1	35.8		9.5		44.0	3.4		8.6		24.9	4.9	K
9.5	43	5.9	52.8		9.4		32.3	45.4		7.3		40.2	6.6	K*b*	7.2		59.4	41.9	K	9.5	51	47.1	3.4	
9.0		30.5	42.9		9.5		55.0	55.5		9.5		47.9	58.0		9.3	28	22.1	40.8		9.4		53.3	36.8	*b*
9.3		40.3	21.4		9.5	54	20.1	39.9		7.0		49.0	22.8	K	9.5		38.5	6.5		9.5	52	26.4	19.5	
9.4		41.7	8.3		9.1		46.5	16.2	K	6.8	12	26.5	12.8	K	9.3		53.0	22.3		9.5		32.8	3.9	
8.9		46.2	28.3	R	9.0	55	14.3	20.0		9.5		42.1	24.8		9.3		55.6	25.9	B*b*	9.4		42.6	0.9	B
6.5		56.1	30.4	R	9.3		15.8	49.6		9.5		57.3	14.5		9.2		57.9	53.3		9.4	53	58.5	33.0	
9.5	44	8.0	11.0		8.5		46.5	23.7	K	9.0		59.1	6.1	K*b*	9.2	29	20.7	35.0		9.5		58.7	49.0	
9.0		21.6	31.5	K	9.0		58.5	29.2	K	9.0	13	2.1	43.1		9.5		32.9	30.1		9.5	54	8.3	57.0	
8.7		39.5	39.9	K	9.3	56	5.6	55.7	K*b*	9.5		21.5	36.8		8.5		36.3	59.7	K	9.1		17.3	52.8	B
9.5		39.8	52.5		9.4		14.0	12.4		9.5		50.0	29.6		8.7	31	42.7	20.9	B	9.3		20.3	12.6	
9.0		59.8	13.1	K	8.8		29.8	9.5	K	9.1		52.6	36.5	L	9.3		43.6	24.1		9.0		39.1	2.0	*B*
9.0	45	3.2	43.2	K	9.5		38.6	37.5		9.5		56.3	54.5		9.2	32	38.7	30.5		8.7	55	38.4	45.7	L
6.0		51.1	28.7	K	8.9		41.7	9.1	K	9.4		56.3	59.0		9.5		44.1	23.3		9.5		39.1	25.9	
9.0	46	7.8	16.9	K	9.0		42.7	12.3		9.3	14	12.6	55.9		8.5		50.9	19.4	K*b*	9.0		46.2	36.7	L
9.0		9.6	17.7	K	9.0	57	35.2	2.2	K	9.4		28.3	15.1		9.5	33	15.1	18.0		9.5		46.4	33.6	*a*
9.5		18.5	6.6		9.2	58	43.2	58.7		9.5		30.0	55.2		9.5		35.2	46.1		9.3	56	32.5	0.0	K
9.4		22.9	45.9		9.4	59	53.5	57.0		9.5		45.6	9.9	B	9.5		40.4	1.8		9.3		55.9	4.2	
9.5		51.5	23.8		9.4	0	4.6	16.5		9.5		58.0	3.0		9.5	35	9.7	38.1		9.4	58	10.2	52.4	
9.4	47	9.2	46.2		9.3		15.0	29.9	*b*	9.0	15	13.6	29.5		9.2		24.6	24.6		9.3		33.5	35.0	
9.4		18.8	6.8		9.5		42.1	20.6		9.3		18.0	27.4		9.5		34.2	31.9		9.5		33.7	54.5	
7.8		26.7	28.9	B	9.3	1	5.0	19.6		9.5		20.6	8.9		8.5		35.9	11.4	K	9.4		40.6	29.2	
8.9		27.7	33.3		9.0		33.3	20.2	K	9.5		26.6	53.3		9.2	38	16.6	16.0		8.9	59	5.2	5.3	K
9.0		53.5	24.5		8.9	2	7.1	52.7		8.5		27.8	36.0		9.5		29.6	40.5		9.5		7.7	31.2	
9.2		59.0	3.2	B	9.0		12.1	12.4	K	8.2	16	9.5	26.7	L	8.7		53.8	5.4	B	9.3	0	0.5	51.8	
8.3	48	9.8	18.3	K	9.5		19.2	53.6		9.5		49.6	53.9		9.2	39	15.7	47.8	*b*	8.5		6.5	37.4	R
8.5		11.9	8.9	K	9.5		49.5	21.6		9.5		51.6	51.7		8.7		30.1	5.9	K	9.1		19.1	0.9	K
var		12.9	4.2		9.5		52.0	26.2		9.0	17	15.0	39.5	K	9.4		32.6	27.9	B	9.5		27.0	32.6	
8.3		20.5	24.9	K	9.4	4	17.5	45.2		9.5		34.1	40.4		9.4	40	31.0	26.1	B	6.5		34.7	19.1	K
8.3		29.6	12.8	R	9.4		34.6	46.5	B	9.5		48.2	29.0		9.4		47.8	11.2		9.5	1	6.4	12.8	
9.5		35.7	51.2		9.4		38.0	46.0	B	9.2	18	15.3	28.6		9.5	41	3.6	41.6		9.5		39.5	46.8	
9.5		53.5	32.6		9.5		47.2	59.6		9.4		18.2	35.1		9.2		22.6	15.6	R	9.5	2	7.1	57.1	
9.5		57.7	46.7		9.4		50.1	49.0		7.0		24.6	51.0	K	9.2		34.9	27.0		8.5		8.9	46.5	K
9.5	49	5.2	50.1		7 8	5	14.0	19.2	K	9.3		29.0	51.5	*a*	9.2		37.9	40.2	*b*	9.4		22.1	8.7	
8.3		18.2	17.9	K	7.3		16.6	10.1	K	8.9		39.6	8.8	B	8.7	42	54.2	15.3		9.4		55.5	16.5	
9.5		28.0	37.8		9.3		23.6	59.5		9.5		40.5	25.9		9.5		55.6	57.6		9.5	3	11.3	55.1	
		+	+				+	+				+	+				+	+				+	+	
10pr.		*27.55*	*2.19*		*10pr.*		*27.67*	*2.31*		*10pr.*		*27.91*	*2.49*		*10pr.*		*28.13*	*2.64*		*10pr.*		*28.50*	*2.84*	

4701—4760					4761—4820					4821—4880					4881—4940					4941—5000				
	22^h		+17°			22^h		+17°			22^h—23^h		+17°			23^h		+17°			23^h		+17°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	3	13.8	45.2	K	9.3	24	29.6	39.2		9.5	44	32.0	10.5		9.4	5	10.2	11.0	b	9.5	27	43.4	55.4	
9.5		21.2	32.3		9.3		57.6	1.9		8.7	45	46.8	25.6	B	9.5		45.3	39.7		9.4		52.4	26.0	
9.5		35.0	27.9		9.2	25	6.3	46.8	R	9.3	46	0.8	56.4	B	9.0	6	19.2	39.5		9.4		59.4	25.7	
9.5		44.5	1.4		9.0		7.9	10.2	K	9.5		25.6	37.2		8.3	8	19.9	50.5	K	9.4	28	31.4	26.4	
9.5	4	5.6	46.2		8.0	26	9.9	3.0	K	9.4		42.0	13.6	*B*	9.5		48.4	35.7		8.9		39.9	47.4	R
9.5		6.3	31.2		9.3		13.3	37.5		9.4		46.0	59.9		9.5		51.9	18.7		8.0		41.9	37.7	K
8.3		18.5	1.9	Rb	9.0		46.2	7.3	K	7.1	47	11.5	1.7	K	7.7		55.4	27.7	K	9.5		44.9	42.2	
9.3		28.6	23.3		9.2	27	21.9	38.5	K	9.2		20.7	33.0		9.5	9	3.9	27.3		9.5	29	4.4	53.1	
8.9		42.7	57.2	R	9.3		30.0	2.5		9.5		22.9	59.6		8.0		7.3	2.9	K	9.1		6.4	30.4	
9.2	5	14.9	57.7		9.3		30.6	15.5		9.3		52.1	58.3		9.5	10	25.9	41.2		9.0		20.6	6.8	
9.5		22.3	58.2		9.0		51.6	28.2	K	9.3	48	15.6	33.5		7.0		26.7	30.5	Pb	9.0	30	8.4	52.9	K
7.0	6	12.4	35.0	L	9.3	28	28.4	56.0		8.0		23.1	1.5	K	8.7		41.1	54.4		5.8		39.6	37.3	Kb
9.5	7	7.6	25.0		9.3		43.5	8.8	b	7.8		26.4	24.9	*B*	8.7		50.7	56.0		9.5		47.4	47.4	
8.5		21.9	19.5	K	9.5		55.7	57.9		9.5		38.0	8.5		9.5	11	10.0	56.3		9.5	31	8.9	54.7	
9.1		45.5	2.9	*B*	9.5	29	14.5	2.6		9.2		44.0	8.6		9.3		24.4	48.5		9.5	32	39.5	31.9	
9.4	8	7.3	1.0		9.5		41.0	14.0		9.3		52.6	35.5	*B*	8.0		34.9	51.1	K	7.2		58.5	24.7	K
8.1		30.2	54.1	K	9.3	30	41.6	42.0	b	9.5	49	3.6	10.8		9.5		39.7	20.5		8.7	33	4.9	49.4	R
9.5		39.8	11.7		9.3	31	4.9	3.7	K	9.5		30.0	6.3		9.5		41.4	15.4		9.5		17.4	48.0	
9.5		44.8	19.5	*B*	9.3		43.0	41.9	*B*	9.3		31.3	18.5		9.5	12	9.9	13.2		8.8		31.4	29.5	
8.8	9	3.6	52.1	K	9.5		54.6	16.0		9.5		45.7	56.6		9.3	13	15.2	38.5		9.5		49.4	51.5	
*																								
9.2		26.0	11.2	K	9.3	32	35.3	27.4		8.5	50	41.8	14.8		9.5	14	5.9	18.1	K	9.5	34	2.2	2.8	
9.3		43.9	0.0		9.3		40.2	4.8		8.5	51	30.3	35.7		9.5		29.9	45.0		9.0		33.9	38.4	K
9.3	10	4.9	23.0		9.5	33	15.3	41.7		9.5		40.0	21.9	B	9.5		53.4	15.3		9.5		40.4	4.8	
8.2	11	13.6	41.7	K	9.5	34	0.0	40.3	*B*	9.0	52	4.0	9.8	K	9.1	15	7.4	48.1	K	7.3	35	12.9	51.9	K
8.5	12	6.4	57.9	*R*	9.0		19.3	56.7		9.5		55.3	20.0		9.0		30.5	55.9		9.5		14.6	7.0	K
9.5		8.3	34.7		9.1		22.1	10.1	K	9.4	53	22.2	44.3		8.4		43.1	48.0	K	9.5		18.9	34.3	
8.5		13.9	21.9	K	9.3		23.3	19.5		9.3		48.3	24.7		9.5		49.3	51.0		9.5		31.9	40.2	
9.3		50.1	55.3		9.3	35	9 3	12.2		~~9.0~~		~~53.2~~	~~40.0~~		9.5	16	3.4	14.2		9.1		53.9	13.6	K
9.2	13	51.0	3.1	*B*	9.2		10.7	6.2		8.7	54	23.7	54.9		9.5	17	12.9	19.0	Kb	9.5	36	4.4	20.5	
9.5	14	4.0	10.2		9.4		18.5	46.2	*B*	9.5		41.5	9.2	B	9.5		13.7	57.0		9.5		36.3	47.1	
8.0		12.7	14.3	K	9.2		38.4	6.0		9.5		52.5	9.2	B	9.5	18	29.9	18.3		9.5		36.9	50.2	
9.3		30.9	19.2		8.6	36	0.6	44.6	K	8.0	55	2.8	45.3	*B*	9.5		38.9	36.4		9.3		43.4	27.7	
9.5		55.3	6.7	*B*	8.7		20.9	35.2	Kb	8.3		16.8	51.6		9.5	19	58.4	48.4		9.0	37	7 9	20.4	Kb
9.0	15	44.3	47.8		9.4		26.0	53.7	*B*	9.5		20.8	8.2		9.3	20	11.1	0.2	b	9.5		53.4	21.8	
9.5		54.5	47.7		9.4		31.0	45.4	*B*	8.5		41.3	9.8	K	9.5		33.0	59.9		9.3	38	34.8	40.5	b
9.5	16	8.2	24.6	*B*	9.2		32.0	49.5		9.5	56	16.3	38.4		9.4		46.0	55.4		9.4	39	16.4	35.6	
9.4		15 8	43.4		9.5		34.6	34.0	K	9.5		29.3	28.9		7.8		58.7	43.8	*B*	9.5		54.4	43.9	
9.0		18.6	1.2	K	9.5		44.0	4.6	K	9.5		30.0	2.6		9.1	21	1.9	32.9		9.3		59.8	47.8	
9.3		24.3	49.0		9.2	37	34.5	9.2	K	9.5		37.7	56.8		9.4		2.1	0.6		9.5	40	7.2	30.4	
8.7		30.4	41.4	R	8.5		47.6	17.0	Kb	8.8		43.3	29.5		9.1		14.0	53.5		9.5		25.1	52.3	
8.7		43.6	18.1	K	9.4	38	30.5	24.9	*B*	8.3	57	13.5	6.7		9.1		20.8	58.3		9.3		44.4	48.7	
9.5		51.6	33.0		9.3		32.3	37.5		9.2		25.9	8.1		8.9		59.9	31.5	K	9.1		46.7	19.0	b
8.5	17	53.3	2.2	K	9.5		40.7	56.4		7.7		51.6	51.2	K	9.3	22	0.8	23.0		9.1	41	16.4	24.5	K
9.2	18	24.0	41.8	*B*	9.3	39	22.3	55.0		9.2	58	0.0	54.6	K	9.5		1.9	47.8		8.5		18.1	42.2	
9.5		28.4	59.4		9.5		31.0	21.2	*B*	8.0		45.3	18.5	*B*	9.4		6.8	23.8		9.5		28.4	45.3	
6.7		42.1	43.0	K	9.5		32.0	21.9		6.7	59	6.8	44.3	K	8.9		12.4	44.7	K	9.5		29.1	48.8	
9.0	19	9 6	18.8		9.2		47.5	5.0		9.5		52.3	19.2		9.5		18.9	1.9		9.5	42	17.0	30.2	
9.5		43.3	52.6		8.8	40	4.8	37.5		8.2		53.5	11.3	*B*	9.1		46.4	28.1	K	9.5		36.6	5.0	
9.5		46.5	51.2	K	8.5		19.2	4.1	K	8.6	0	54.0	2.6		9.5		48.9	47.7		9.4		40.0	17.9	
9.5	20	20.7	20.2		9.2	41	12.0	6.6	K	9.3	1	12.7	51.2		8.5	23	49.4	28.9	K	9.3		40.4	15.1	
9.5	21	0.0	52.4		9.3		24.3	47.9		9.5		22.3	1.4		7.3		50.3	58.9	Kb	9.5	43	27.2	4.9	
9.5		21.2	53.3		8.8		25.9	21.9	K	8.8		29.5	9.9	K	9.4		52.4	55.7		9.5		46 4	52.1	
9.5		33.0	17.2		8.8		51.2	46.5	K	9.2		50.5	32.5		9.5	24	19.3	18.6		9.0		51.4	33.8	R
9.5		43.0	29.9	Rb	8.8	42	0.4	16.1	K	8.5		58.0	37.8		9.3		54.2	48.1	R	9.5		54.5	4.3	
9.2	22	4.6	27.8		9.0		1.6	29.6		7.1	2	12.5	56.9	L	9.5	25	29.4	13.5		9.5	44	6.9	13.2	
9.5	23	26.3	39.2		8.5		33.3	43.4	K	9.0		24.8	35.1		9.5		36.4	31.1		9.5		19.7	22.3	
9.3		35 8	10.5		8.8	43	8.3	24.7	K	9.2	3	2.2	44.6		9.5		43.9	12.1		9.5		53.0	32.5	
8.7		36.4	24.3	K	7.3		45.3	14.3	K	9.5		23.6	37.6		6.7	26	15.2	1.3	K	9.5	45	17.0	11.0	K
8.7		40.0	14.3	K	9.5	44	14.9	21.3		9.0	4	13.1	49.8	K	9.5		24.9	36.4		6.5		37.9	5.8	
9.5	24	23.4	1.7		9.3		16.3	38.2		9.5		29.6	38.7		9.0	27	6.9	20.4	K	9.5		56.4	8.4	
		+	+				+	+				+	+				+	+				+	+	
10pr.		28.84	2.99		10pr.		29.20	3.11		10pr.		29.54	3.21		10pr.		29.95	3.28		10pr.		30.29	3.32	

4720 a				
9.5	9	7.9	10.7	a

5001—5008					5009—5016					5017—5024					5025—5031					5032—5038				
	23ʰ		+17°			23ʰ		+17°			23ʰ		+17°			23ʰ		+17°			23ʰ		+17°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
7.0	46	31.4	11.2	K	9.5	49	21.9	10.3		9.5	51	38.7	5.0		9.5	54	32.2	56.8		7.9	58	18.7	1.7	K
7.6	47	25.8	57.4	L	9.4		33.9	38.9		9.5		59.7	18.2		9.5		56.4	30.6		9.2		20.9	21.2	
9.5		31.1	0.4		9.4		34.1	39.6		9.3	52	16.8	31.5		8.4	55	8.4	52.8	K	9.2		26.1	26.0	a
9.5	48	7.2	36.3		9.3		51.4	38.3		9.5		43.2	55.5		9.3		23.3	51.4		7.7		31.3	26.3	K
9.5		7.7	50.1		8.1	50	8.4	27.1	K	9.0		50.4	10.0	K	9.2	57	29.6	20.7	R	8.7		33.1	17.1	
9.5		8.0	6.7		8.0		24.2	54.0	K	9.5	53	4.2	12.0		9.5		31:8	5.4		9.5	59	35.8	36.6	
9.5		27.2	34.0		9.5		28.5	52.8		8.2		30.9	3.8	K	8.7		32.8	37.7	Kb	9.0		38.8	23.4	K
9.5		51.1	55.2		9.4	51	15.4	13.6		8.4	54	22.1	56.1	K										
			+					+					+					+						
										10pr.		*30.58*	*3.34*											

Zone +18°

1—40					41—80					81—120					121—160					161—200				
	0ʰ		+18°			0ʰ		+18°			0ʰ		+18°			0ʰ—1ʰ		+18°			1ʰ		+18°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	1	38.6	18.3		9.5	18	8.4	18.8		9.3	29	44.3	46.5		8.8	46	46.7	56.7		9.5	5	23.2	56.3	
9.2		39.2	7.2		8.3		24.0	15.0		9.5	30	10.9	34.1		6.0		55.4	24.1	Kb	9.5		48.5	42.2	
7.8		58.4	18.4	K	9.1	19	0.4	0.5		9.0		17.2	5.0	K	9.5	47	2.1	17.7		8.0	6	38.2	21.3	Kb
7.8	2	4.3	44.2	K	9.5		16.0	56.5	B	9.5		36.6	27.1		9.3		12.0	0.8		9.3	7	4.1	22.4	
8.4		19.9	35.4	K	9.3		38.8	4.0		7.8		45.5	54.3	K	9.0		15.5	40.1	K	9.5		34.4	22.0	
9.5	3	5.1	59.3		9.3		45.6	48.2	B	9.0		58.4	13.9		9.0		19.9	53.2	K	9.5		44.7	55.0	
9.5		47.2	36.0		9.1		47.5	33.7	R	9.3	31	21.7	26.7		9.0		32.0	8.5		9.5	8	28.8	42.3	
9.5		47.3	6.7		9.5		52.9	0.6		9.4		37.8	58.0		9.5	49	26.5	56.5		8.8		33.0	2.0	
9.1	4	3.4	52.0		8.7	20	4.1	44.8	R	9.5	32	20.0	1.6		9.5	50	0.3	12.3		9.5		56.4	59.9	
9.5		7.1	16.8		9.0		19.0	15.0		9.1		26.9	0.2	*b*	8.9		42.4	58.3	K	9.2	9	43.6	54.5	*b*
8.2		7.8	5.8	Kb	6.8		26.0	42.6	Kb	9.5		54.1	53.2		9.5	51	37.0	31.7	*b*	8.8	10	14.8	2.7	
8.9	5	10.5	58.1	K	9.5		45.5	49.9		9.5	33	28.5	25.4		9.5	52	8.4	55.0		9.0	11	1.8	31.1	R
9.5		49.3	35.9		8.8	21	2.5	54.4		8.3		40.0	35.7	K	9.5		38.9	48.2		9.5		5.6	2.3	
8.9		49.4	43.0	K	9.5		31.7	4.7		9.3		50.2	9.4		9.4	53	38.7	17.5		9.0	13	1.9	52.5	
9.4		50.3	16.7		9.4		46.0	54.3		9.5	34	13.6	57.2		9.0	54	29.5	17.2	B	9.5		32.8	18.2	
9.0	7	34.1	15.4		9.0		47.4	14.4	K	9.1	36	19.5	42.7	K	9.5	55	28.7	41.4		8.3		38.8	15.5	B
9.5		37.5	48.2		9.3		50.0	7 6		9.5		25.9	57.6		8.2		41.2	4.6	K	9.5		45.3	40.1	
9.1		39.9	17.7	K	9.3		56.4	13.5	a	9.3		53.7	39.1		9.1		46.0	51.1		9.5		54.6	5.7	B
8.9	8	9.8	5.1		9.4	22	1.8	49.1	B	9.4	38	5.3	35.0		9.0		57.0	5.2	K	9.4	14	21.4	19.6	B
9.2		17.1	45.1	K	9.0		33.6	37.0	R	9.2		51.5	5.9		9.4	56	4.0	44.6		9.5		48.6	53.6	
9.5	9	5.4	41.5		9.4		56.0	33.6		6.3	39	35.0	48.0	L	9.5		35.2	42.9		9.0	16	16.3	21.3	
9.5		38.0	41.3		9.5	23	9.3	16.3	B	9.3		44.8	10.8	B	8.7		46.7	35.2	Lb	9.5		27.9	9.8	
9.0		42.1	18.1	K	9.5		26.0	52.9		7.5		56.2	6.6	B	7.5	57	7.7	6.9	K	9.5		59.4	3.0	B
9.5		46.0	4.7		9.5		36.4	16.2	B	9.3		59.3	52.2	B	9.5		28.3	51.6		8.8	17	3.3	18.5	
9.3		54.5	26.7		9.1	24	7.2	35.8	a	9.4	40	28.3	21.4	B	7.3		29.6	25.1	K	9.5		10.4	39.4	
9.0	10	48.5	8.6		8.0		10.5	39.5	B	8.5		29.5	40.8	L	9.5		43.1	47.1		9.5		38.3	14.1	B
8.6		49.6	36.0	L	7.0		21.0	50.4	R	9.3	41	54.3	5.7	B	9.2	58	27.0	57.8	*b*	5.3	18	27.1	25.1	Kb
8.2	11	6.0	51.7	K	9.4		25.9	7.8		9.5	42	28.5	13.6		9.3		39 8	9.2		9.0		42.2	32.5	B
9.3		34.4	13.6		9.5		41.7	9.8		9.5		29.0	8.0		7.8		46.6	37.7	K	5.5		53.1	29.0	K
9.5	12	6.5	31.7		9.5	25	14.0	54.8	B	9.5		39.0	40.4		9.4	59	35.1	1.8		9.5	19	19.0	59.8	B
9.5		23.0	35.4		9.0		23.3	39.2	K	8.6	43	37.5	1.1	K	9.4	0	44.7	48.1	B	9.5		30.3	36.6	
9.5	13	49.6	25.3	B	9.5		42.2	0.8		9.5	44	31.9	31.2	B	8.3	1	39.4	10.3	L	9.3		53.2	10.7	
9.3	14	44.8	6.7		9.5	26	39.9	50.6		9.5	45	2.2	35.2		5.8	2	4.4	52.6	K	9.1	20	7.4	14.0	
9.1		46.5	19.2	*b*	8.7		51.7	15.6	L	8.5		7.6	9.8	Kb	9.5		4.6	27.5		9.5		29.8	50.6	
9.5		54.9	53.7		9.0	27	17.4	46.5	R	9.2		31.2	21.8	K	9.5		31.3	33.8		9.5		56.9	6.9	
9.5		58.5	46.8		8.5		18.0	5.7	L	7.5		36.7	58.8	R	8.5		51.2	3.7	L	9.5	21	28.4	34.5	
9.3	15	33.0	10.0		9.5		44.8	48.9		8.5		48.5	18 2	K	9.5	3	31.2	33.1		9.5		41.9	32.0	
8.8	16	21.5	51.0	Kb	9.5		52.1	43.4		9.0		55.0	24.1	K	9.4	4	29.9	47.5		9.0	22	8.7	56.6	B
9.4		33.3	2.0	B	8.8	28	3.4	15.6	K	9.3	46	3.4	26.2		9.2		33.6	58.1		9.1		40.3	35.9	*b*
9.3	17	13.5	45.4		9.3	29	10.6	42.0		8.8		27.6	3.4		9.5	5	1.0	58.3		8.8	23	8.2	55.2	
		+	+				+	+				+	+				+	+				+	+	
10 pr.		*30.89*	*3.34*		*10pr.*		*31.16*	*3.32*		*10pr.*		*31.48*	*3.29*		*10pr.*		*31.81*	*3.24*		*10pr.*		*32.18*	*3.16*	

261 — 260

m	1m	+18°	
9.5	24 49.6	8.6	
8.8	58.3	33.0	B
8.4	25 20.0	44.8	B
9.0	24.1	51.1	B
9.3	49.1	7.5	
8.5	26 0.4	10.8	
8.7	4.0	0.9	
9.5	41.8	51.7	
9.1	45.2	1.5	
9.1	45.7	35.2	b
9.5	50.3	12.6	
8.6	27 53.5	55.2	
9.5	28 28.9	48.6	
9.4	55.5	19.9	
9.5	29 54.1	17.4	
9.5	30 47.9	46.6	
9.5	31 29.6	55.4	
9.5	43.8	55.0	B
9.0	32 12.7	34.0	
9.1	35.4	47.5	b
8.2	57.8	38.8	K
9.2	58.9	52.3	
9.5	33 39.7	56.2	
8.9	55.4	18.6	
9.5	34 30.0	3.6	
9.2	35 33.9	42.6	
9.3	36 31.4	48.8	
9.0	33.4	41.2	R
9.3	36.9	54.4	
9.4	51.2	22.5	B
9.5	37 17.3	51.3	
9.5	50.2	12.4	
9.0	38 14.4	23.9	
9.1	39.7	22.1	b
9.3	39 33.9	22.2	
8.8	54.5	44.0	
9.0	42 9.7	37.8	b
9.5	43 50.1	11.7	
9.5	44 4.8	25.0	
8.9	49.0	38.9	
9.5	45 25.8	44.5	
9.1	35.4	45.9	
3.5	35.6	35.9	K
9.4	51.7	35.3	K
9.5	46 2.7	52.9	B
9.5	3.4	48.9	B
9.5	47 14.8	32.9	
9.0	48 31.7	36.0	R
9.1	54.9	48.6	
9.2	49 12.8	14.9	
9.0	16.6	34.3	Kb
8.8	36.1	17.3	K
9.4	59.7	52.0	
9.2	50 37.2	8.2	
9.2	51 4.1	51.7	b
9.5	28.4	11.6	B
9.5	52.6	11.7	B
8.8	52 34.4	30.1	
9.5	53 35.8	53.3	
8.9	58.5	28.8	
10pr.	+ 32.56	+ 3.05	

261 — 320

m	1m — 2m	+18°	
8.5	54 23.7	41.6	K
9.5	58.0	56.2	
8.8	58.0	21.7	
9.5	55 0.8	46.2	
8.7	47.0	36.2	R
9.5	56 28.6	12.8	
9.5	57 4.6	44.0	
8.9	7.6	28.8	Kb
9.3	58 7.7	58.5	
9.2	33.3	55.4	
9.2	54.9	53.6	
9.1	59 30.5	59.0	Rb
9.4	0 4.1	40.1	
9.5	11.8	33.5	
9.1	11.9	40.2	b
9.5	27.7	9.0	
6.0	2 36.1	49.0	Kb
9.4	45.6	52.2	
9.1	3 19.2	53.3	
9.5	4 3.6	23.1	
9.1	7.6	16.6	Rb
9.4	5 47.1	41.4	
7.2	49.7	56.1	Kb
8.5	6 39.6	23.9	
9.0	54.8	7.3	
9.5	7 18.3	43.6	
8.8	19.0	9.9	
9.5	9 3.6	49.8	
8.8	51.5	59.7	L
9.5	10 41.1	56.0	
9.4	48.3	35.2	
9.0	12 48.6	11.8	
9.1	13 16.4	58.4	Kb
9.3	37.5	14.0	
9.5	40.0	30.3	
9.5	44.5	12.1	
8.9	14 37.1	24.6	
8.4	15 26.9	58.2	
9.5	28.1	49.1	
9.1	33.6	18.0	
9.5	41.1	19.2	
9.3	44.2	8.1	
8.0	17 35.3	53.9	Kb
9.5	55.1	45.6	
8.0	18 10.1	14.8	K
9.5	33.8	8.7	
9.5	19 13.0	59.1	
9.4	40.0	1.6	
9.4	43.6	18.4	
9.5	20 1.2	55.7	
9.4	15.4	20.8	
9.0	40.9	42.2	
9.4	53.4	2.2	B
9.5	21 52.2	51.5	
8.1	22 27.1	1.6	L
9.5	46.5	4.5	
9.3	50.9	54.1	
9.0	23 28.7	8.8	
8.5	38.2	38.8	
9.5	24 20.7	31.5	
10pr.	+ 33.14	+ 2.81	

321 — 380

m	2m	+18°	
8.6	24 25.2	16.3	
9.5	29.0	48.1	
9.4	25 10.9	3.6	
9.5	11.5	16.6	
7.0	31.2	15.6	Kb
9.3	42.0	51.8	
9.4	26 4.9	7.6	
9.2	59.3	6.2	b
9.5	28 18.7	24.5	
9.5	29.2	54.2	
9.4	38.0	49.5	
9.5	50.7	22.4	b
9.5	30 8.2	46.3	
9.5	31 10.3	28.7	
9.5	56.5	53.8	
9.1	32 33.4	5.3	
7.0	33 0.2	11.1	K
9.5	34 5 8	13.9	
8.5	35 8.7	48.0	K
9.5	32.8	19.1	
9.5	36 30.8	41.3	
9.5	37 24.3	7.4	
9.5	49.8	3.3	
8.3	38 11.8	12.6	K
9.5	22.7	45.8	
9.5	46.3	53.7	
6.8	39 17.2	46.7	K
9.4	18.1	5.5	
9.1	23.4	37.0	B
9.5	25.8	56.7	
9.3	54.1	38.9	B
9.5	55.6	34.2	
9.5	40 40.2	51.2	
9.5	58.3	55.4	
8.1	41 3.3	7.3	K
9.5	52.5	42.5	
9.3	42 1.7	31.5	R
9.5	30.7	5.8	
7.2	32.0	33.2	K
9.1	37.2	52.2	
9.0	47.7	43.2	
9.5	59.8	46.3	
9.5	43 6.2	12.1	
9.4	15.3	36.3	R
8.5	30.3	41.9	K
8.9	44 10.6	7.1	
8.8	13.7	32.2	K
8.8	15.8	49.9	
9.5	45 18.4	2.1	
8.9	37.8	1.4	K
9.5	46 26.2	15.3	
9.4	26.8	44.3	
9.5	57.7	26.5	
9.4	47 10.2	16.7	
9.4	19.8	11.5	
8.8	39.5	33.0	
9.2	55.2	17.1	b
9.5	48 49.7	31.2	
9.3	49 12.2	38.4	R
9.5	39.8	39.9	
10pr.	+ 33.60	+ 2.56	

381 — 440

m	2m — 3m	+18°	
9.4	49 54.7	54.8	
8.8	50 10.8	39.5	R
8.5	41.9	59.9	
9.5	52.8	15.8	
9.5	51 14.3	17.0	
8.9	23.9	9.5	
9.5	40.8	2.2	
9.3	46.2	12.5	
9.4	52 4.3	18.0	
8.8	25.0	2.6	
8.0	57.7	49.5	
9.5	53 21.2	48.5	
9.2	51.2	48.8	aK
9.5	54 7.3	14.2	
9.3	8.8	29.6	
9.5	17.3	46.7	
9.5	39.8	42.7	
9.1	53.7	27.4	b
9.0	55 54.3	49.5	
9.5	56 6.8	2.0	
9.5	14.7	40.2	
9.5	57 6.1	0.3	
9.5	30.0	7.1	
9.5	58 5.8	48.9	
9.5	14.5	23.6	
9.5	15.7	44.6	
9.5	23.7	3.0	
9.5	25.2	59.5	
9.3	44.1	0.9	
8.5	56.7	48.2	
9.3	59 32.9	8.9	
9.3	42.8	37.1	
9.3	0 3.8	53.9	
6.5	8.3	15.2	K
9.5	14.7	48.1	
9.5	55.6	4.3	
9.5	1 11.3	12.5	
7.0	20.7	49.1	Kb
8.8	23.8	28.8	
9.1	32.2	36.4	
9.2	38.8	52.3	
9.1	56.7	40.4	R
9.2	2 5.7	18.0	
8.0	30.5	11.1	K
9.5	31.7	45.2	
9.5	45.4	15.7	
9.0	3 32.8	45.0	R
9.5	4 1.7	27.0	
9.4	11.0	20.8	
8.5	19.2	23.2	L
9.5	42.0	38.5	
7.0	5 41.2	26.2	K
9.1	6 16.7	12.5	
9.5	29.8	38.1	
9.1	39.7	6.0	
9.3	48.2	3.5	
9.4	57.8	38.1	
9.5	7 8.0	21.9	
8.9	8.7	1.2	K
9.3	32.5	40.5	
10pr.	+ 33.87	+ 2.37	

441 — 500

m	3m	+18°	
9.5	7 49.7	12.8	
9.5	51.8	20.0	
9.5	54.2	4.7	
8.0	8 4.2	48.5	K
9.2	27.4	50.5	
9.5	59.5	44.0	
9.5	9 7.8	57.0	
9.5	8.5	42.4	
9.5	26 5	41.3	
9.5	28.0	6.4	
9.5	30.3	4.6	
8.9	56.7	34.7	
9.5	10 6.7	1.6	
9.5	27.8	28.1	
9.4	30.7	28.8	
9.5	31.5	51.6	
9.1	51.8	56.0	R
9.2	11 21.9	8.2	
7.3	32.7	32.5	K
9.5	12 1.8	54.1	
8.0	20.0	39.5	L
9.5	30.7	29.5	
8.8	32.8	12.5	Kb
9.3	36.2	22.5	
8.2	44.4	57.1	L
9.5	13 29.8	18.6	
9.5	40.3	53.7	
9.5	14 20.8	14.4	
9.3	55.2	24.6	
9.5	15 19.7	49.5	
9.5	23.3	38.5	
8.8	24.6	2.5	
9.5	31.8	56.6	
9.3	16 6.8	2.2	
9.0	17.3	32.9	B
8.5	24.1	53.0	
9.2	43.8	59.0	
9.5	50.2	48.1	
9.0	17 8.7	22.9	
9.1	29.9	58.3	
9.5	46.7	28.5	
9.5	18 0.8	12.8	
9.5	28.7	52.5	
6.5	47.2	14.9	Kb
9.0	19 15.3	41.2	B
9.1	33.2	33.6	
8.3	38.8	23.2	K
9.5	20 48.7	56.9	
8.6	21 31.7	13.6	K
9.5	22 9.8	52.2	
9.5	37.5	37.0	
8.3	37.8	17.7	K
9.5	57.9	1.3	
8.3	23 28.0	18.3	K
9.5	39.7	56.8	
9.5	41.1	22.3	
9.5	56.3	29.1	
9.5	24 19.8	18.3	
9.5	29.6	32.1	
9.5	32.7	53.6	
10pr.	+ 34.09	+ 2.20	

−5° +18°

501—560

m	3ᵘ	′ ″	+18°	
9.5	24	39.8	19.4	
9.3		47.4	3.6	
8.2		49.4	53.4	Kb
9.5	25	6 8	25.6	
9.0	26	17.7	22.2	R
8.3		39.8	48.8	
7.0	27	0.8	25.7	K
9.5		14.7	16.1	
9.4		44.8	50.2	
9.5	28	29.5	36.0	
9.5		31.9	22.0	
9.4		35.1	28.7	B
9.0		44.6	59.2	
8.3	29	4.3	7.6	K
9.5		23.2	53.2	
9.5		45.7	8.7	
7.3		50.8	52.3	K
9.3	30	29.0	1.8	
9.5	31	39.8	46.8	
9.5		48.8	47.5	
7.8	33	6.1	54.8	K
9.5		19.7	37.4	
9.5		45.2	11.2	
9.5		48.7	49.6	
9.4	34	6.8	39.5	
9.5		47.8	32.4	
9.3		51.5	23.3	
9.5	35	6.7	39.8	
9.5		13.8	4.7	
9.5		15.8	24.7	
9.2		37.2	26.4	b
9.5		58.8	15.7	
9.5		59.3	38.7	
9.0	36	5.7	41.9	
9.5		23.7	50.0	
9.3		59.8	29.1	
8.4	37	42.8	6.3	K
9.5	38	1.7	18.2	
9.4		5.7	31.3	
9.5	39	0.8	49.6	
9.1		21.7	27.1	
9.0		37.7	12.6	K
8.8		52.8	51.6	
9.5	40	24.2	23.8	
9.5	41	46.8	3.2	
8.1	42	2.2	48.5	Kb
9.5		11.6	45.9	
9.5		54.2	52.9	
7.9	43	57.1	29.6	K
7.9	44	3.2	9.2	K
9.5		29.7	44.5	
9.3		54.8	15.0	
8.5	45	59.3	11.1	K
9.4	46	7.1	58.8	
9.5		8.3	31.5	
9.1		26.8	44.5	
8.0		45.3	9.3	R
8.6		57.2	56.3	Kb
9.5	47	34.3	18.7	
8.7		47.1	49.1	
		+	+	
10pr.		34.33	1.97	

561 - 620

m	3ᵘ—4ᵘ	′ ″	+18°	
9.2	48	17.8	45.9	
8.5		40.8	25.0	K
9.4		57.0	13.2	B
9.3	49	5.0	16.0	
9.5		26.8	30.3	
9.1	50	51.4	49.7	Rb
9.5	51	5.3	14.2	
9.3		23.9	55.7	
9.5		54.3	5.4	
9.3	52	6.6	56.2	
9.5	53	27 5	2.7	
9.5		34.0	22.0	
9.5	54	47.2	43.8	
9.0		49.0	15.2	Kb
9.5		54.0	57.6	
9.5	55	6.7	16.9	
9.3		51.8	48.4	b
9.5	57	5.1	7.3	
9.5		20.7	4.5	
9.5		33.7	32.4	
7.5	58	13.2	45.2	Kb
9.5	59	37.8	42.3	
9.1	0	8.2	24.9	
9.5		18.0	2.0	
9.5		21.6	12.3	
9.5		21.8	20.0	
9.5		37.8	21.5	
9.5		46.7	55.2	
8.7		58.8	29.3	K
9.5	1	5.3	48.3	
9.5		44.0	15.4	
9.5		46.8	21.3	
9.1		48.5	4.2	R
6.5	2	19.3	3.0	Kb
9.5	4	37.9	28.7	B
8.9	5	19.2	55.1	K
9.5		47.0	10.9	B
8.0		49 8	30.4	K
9.5	6	0.9	14.4	
9.5		17.7	17.0	
9.2		29.0	56.5	
9.0		54.2	15.3	
8.5		56.0	36.2	K
9.3	7	0.2	10.8	B
9.4		15.3	21.8	
8.9		17.8	36 6	K
9.4		18.5	11.6	B
9.5	8	17.3	47.0	
9.4		40.9	31.2	B
9.5		42.7	8.8	
9.5		48.4	48.0	
9.5		49.7	35.1	B
9.0		53.4	58.3	K
9.5		59.6	40.6	
9.1	9	7.1	49.6	B
9.4		13.4	50.8	B
9.5		38.0	11.7	
9.5		53.8	11.7	
9.2	10	44.3	35.9	
9.5	11	3.3	59.1	
		+	+	
10pr.		34.60	1.65	

621 — 680

m	4ᵘ	′ ″	+18°	
9.5	11	12.8	26.3	
9.5		18.7	57.3	
7.9		46.1	52.9	B
6.0		59.7	22.1	K
9.4	12	14.4	53.9	B
9.5		24.7	13.7	
9.5		33.4	22.2	
9.5	13	6.8	24.3	
7.0		8.5	4.1	K
9.5	14	11.8	29.1	
9.5	15	41.4	35.8	
7.5	16	17.8	33.3	K
6.5		30.2	42.3	B
9.1	17	1.7	30.5	K
9.5		15 8	16.3	
7.5		24.3	31.8	K
7.5	18	33.2	46.0	S
9.5	19	29.0	43.9	B
9.4		32.1	10.1	
3.7	20	8.2	51.9	K
9.5		40.3	9.0	
9.5	21	31.8	31.2	
9.5	22	39.7	47.6	
9.5	23	33.2	48.8	
9.5		37.0	32.8	
9.5		56.8	59.9	
9.5	24	9.7	47.6	
9.1		21.8	36.4	Rb
9.5	25	5.8	38.8	
9.5		45.7	24.9	B
9.5	26	15.9	15.2	
7.8		27.6	6.6	K
9.5		29.2	35.9	B
9.4		31.7	32.4	
9.5		47.7	26.9	
9.2	27	22.2	29.5	K
9.5		28.2	13.2	
*8.0	28	2.3	21.4	K
9.3		7.2	27.9	
9.3		24.4	59.5	B
6.5		49.7	14.2	K
9.0		53.8	23.1	
9.2	29	14.0	4.5	
9.5		49.0	39.8	
9.3		58.0	42.6	B
8.5	30	3.8	26.6	L
9.1		4.5	46.3	a
9.5		37.7	15.4	
9.5		41.4	20.3	
9.0		53.7	48.6	
9.2	31	15.5	15.5	
9.5		17.0	48.6	
9.2		40.2	49.5	
9.5		41.4	54.0	
9.1	32	10.8	47.4	b
9 5		33.7	50.2	
9.0		56.0	24.6	
9.3	33	15.2	15.3	
9.0		30.9	33.1	B
9.0		48.0	4.0	
		+	+	
10pr.		34.82	1.33	

681—740

m	4ᵘ	′ ″	+18°	
9.5	34	2.9	0.5	
9.5		15.7	36.0	
9.4		19.8	43.2	
6.8		24.2	26.9	K
9.5		32.8	26.2	
9.5		54.7	59.7	
9.5		56.0	43.5	
9.0		56.5	20.6	K
9.5	35	24.4	57.8	
8.7		35.3	12.4	
9.4		55.5	31.9	
9.2	36	1.0	59.0	Kb
9.4		2.8	41.8	
9.5		4.0	47.0	
9.5		7.6	34.8	
9.2		7.9	43.8	
9.5		8.5	7.0	
9.5		29.3	47.2	
9.2		40.0	51.8	
9.5		43.0	44.9	
9.2		47.3	51.2	
9.4		49.2	56.3	
~~9.6~~		~~53.4~~	~~55.6~~	
9.3	37	2.2	14.8	
9.1		4.5	45.3	
9.2		5.0	41.6	R
9.5		8.4	58.0	
9.3		13.7	51.0	
9.3		14.3	49.9	
*9.2		16.6	14.3	B
9.5		24.1	42.3	
9.0		25.9	40.7	K
8.6		27.6	54.4	K
8.9		29.8	54.2	K
9.0		32.1	51.1	
9.4		37.9	46.5	
8.0		38.1	32.2	L
9.5		45.3	48.1	
6.5		49.0	28.2	L
9.1		53.5	56.2	K
9.4		57.7	45.9	
9.5	38	8.9	50.9	
9.5		18.2	40.5	
9.5		24.7	51.3	
8.5		26.7	49.0	K
9.1		28.8	25.9	
8.0		40.4	13.4	L
9.4	39	4.6	14.0	B
9.2		24.9	8.7	
9.1		44.8	11.1	
8.9		50.3	31.2	R
9.1		51.7	18.0	R
9.2		52.4	54.2	
7.0	40	12.7	27.3	L
9.2		13.8	43 2	
8.8		35.2	22.2	
9.5	41	34.5	1.7	
8.8		49.6	56.5	K
9.4		51.8	35.4	
9.1	42	20.3	4.3	b
		+	+	
10pr.		34.90	1.18	

741—800

m	4ᵘ—5ᵘ	′ ″	+18°	
9.5	42	42.2	17.7	
9.5		42.8	36.8	
4.5		53.8	35.9	K
9.5	43	32.5	59.2	
9.3		44.2	38.4	
9.4		52.3	45.7	
7.8	45	6.3	49.4	K
9.5		49.8	44.1	
9.2		55.7	32.1	R
9.5	46	2.4	38.8	
9.2		3.5	31.1	b
9.5		25.1	28.9	
9.4		35.7	25.7	
9.0		42.7	12.2	
9.5	47	7.0	58.9	
9.5		19.2	20.8	
9.5		37.4	10.5	
9.5		41.3	59.3	
9.5	48	23.3	50.2	B
9.4		25.1	10.5	
9.5	49	11.0	42.6	
9.3		22.3	42.8	
9.1		34.7	49.9	b
9.5		46.8	28.8	
8.8		52.3	46.3	
9.3	50	14.5	24.6	
9.4		34.7	26.5	
9.5		43.6	43.5	
9.0	51	12.5	34.5	
9.4		49.2	45.0	
9.1	53	17.1	33.0	b
9.5		43.8	41.0	
9.5	54	34.5	48.5	
9.3	55	16.3	29.4	b
9.5		43.4	53.1	
9.3	56	21.8	1.1	
7.9		23.3	3.2	K
9.5		58.8	59.6	
5.2	58	53.0	27.4	K
9.5	59	12.2	3.6	
9.5		28.6	50.5	
9.5	0	20.2	5.6	
8.2		41.9	46.4	L
9.4		53.7	45.4	
9.5	1	1.6	0.2	
9.5		10.5	5.9	
9.2		38.7	26.3	b
9.3	2	15.7	23.3	
9.5		34.6	10.6	
9.5		54.5	35.8	
9.5		56.2	34.8	
9.4	3	43.3	44.0	
9.3	4	19.8	43.1	
9.4		23.6	20.5	
9.3		36.3	19.0	
9.5		52.0	21.4	
9.5		54.5	12.9	
9.5	5	15.0	3.6	
9.5		43.8	28.2	
9.5	6	0.0	52.0	
		+	+	
10pr.		35.01	0.97	

658ᵃ

9.4	28	4.9	24.2	a

710ᵃ

9.5	37	20.2	59.1	

44

m	5ᵐ	+18°	
	801—860		
9.5	6 0.5	28.0	
9.2	5.5	41.6	
9.4	14.1	44.1	
9.5	37.2	2.8	
9.0	7 11.1	1.6	Kb
8.9	20.9	28.8	
9.5	21.0	34.8	
9.2	50.6	6.7	
9.3	54.9	6.5	
9.5	8 11.2	59.2	
9.0	12.8	12.6	
7.8	15.3	16.6	K
9.3	15.3	45.2	
9.3	21.7	41.5	
9.5	37.3	27.5	
9.5	47.6	7.5	
9.4	55.5	18.0	
9.5	9 21.6	54.8	
9.5	22.7	29.6	
9.3	58.3	45.2	
8.9	10 10.0	3.4	
9.2	28.7	36.0	
9.0	31.6	53.9	
9.5	38.3	55.2	
8.7	11 30.8	3.1	K
9.5	31.9	26.3	
9.3	53.5	26.1	Kb
8.8	12 33.7	52.9	K
9.5	33.9	18.0	
9.5	13 6.0	23.8	
7.8	9.9	45.9	Kb
9.4	13.0	45.2	
9.3	24.1	16.0	
9.5	49.3	3.7	
9.3	14 6.5	41.6	
7.9	16.8	52.5	K
9.3	19.3	36.0	R
9.2	29.4	46.1	Kb
7.8	15 2.3	27.7	L
9.3	10.8	20.1	
9.2	35.7	10.7	
9.0	37.9	53.8	
8.8	39.4	52.3	K
9.5	16 18.1	26.1	
9.0	20.2	18.9	K
9.5	52.3	27.5	
9.5	17 26.6	31.7	
9.5	28.0	26.3	
8.6	32.1	59.6	K
9.5	44.8	54.2	
9.5	48.7	45.7	
9.5	18 30.6	17.5	
8.8	52.3	35.5	K
9.2	59.0	44.2	
8.7	19 0.1	22.2	
9.2	9.7	36.9	
9.1	40.8	30.6	
9.5	20 12.0	49.6	
9.4	18.2	10.2	
9.5	18.8	27.6	
	+	+	
10pr.	35.10	0.67	

m	5ᵐ	+18°	
	861—920		
9.4	20 35.7	39.7	
7.0	50.8	14.8	K
7.9	21 21.3	17.6	K
7.9	22.3	18.9	K
9.5	39.5	36.1	
8.9	46.1	38.0	R
9.0	22 36.3	26.5	R
9.2	42.7	56.9	
8.9	43.9	8.3	K
9.0	48.1	54.3	
9.0	23 9.9	53.5	
9.3	10.3	19.0	
7.4	10.5	7.6	L
9.1	21.2	7.6	K
4.4	42.8	28.6	Lb
9.5	24 50.5	57.2	
6.2	25 4.3	26.3	Lb
9.3	4.7	41.4	
9.5	26 24.0	35.7	
9.1	25.5	1.3	b
9.0	29.5	30.7	K
9.2	44.5	28.5	K
9.4	44.6	43.6	R
9.3	27 7.7	40.6	
9.5	14.9	49.5	
9.5	15.1	13.3	
8.3	15.2	39.6	L
9.3	17.2	39.7	a
9.5	35.5	56.7	
9.0	37.8	27.7	K
9.0	46.1	30.4	K
9.5	50.6	28.5	
9.0	28 5.9	48.8	
8.3	8.0	50.8	K
9.5	39.6	24.9	
9.1	43.7	55.1	K
9.5	48.0	13.1	
9.5	29 8.5	28.6	
9.4	32.6	26.9	
9.4	47.5	34.9	
9.2	55.0	2.5	
9.2	30 0.1	14.8	
9.3	12.0	40.3	
9.1	18.3	33.9	b
9.5	37.3	53.0	
9.0	39.4	50.6	
9.5	40.0	6.3	
9.5	57.9	48.9	
9.3	31 15.5	17.1	
9.3	26.7	20.6	
8.5	32 38.7	33.7	B
9.2	44.5	21.3	
9.3	33 9.3	18.8	
9.5	26.0	34.8	
9.0	29.1	27.5	
9.1	35.2	50.5	
9.5	51.8	7.5	
8.3	54.0	36.3	K
9.0	57.0	35.4	K
7.5	57.2	55.1	K
	+	+	
10pr.	35.15	0.47	

m	5ᵐ	+18°	
	921—980		
9.3	34 13.0	56.8	R
9.5	19.9	1.3	
7.1	22.8	55.0	Kb
9.3	23.8	57.9	R
8.7	37.1	26.3	L
9.4	38.0	2.0	
8.9	43.3	45.7	
9.5	48.5	55.8	
9.4	59.9	0.5	
9.5	35 1.8	10.2	
8.8	2.0	4.4	K
9.0	12.8	59.6	K
9.5	14.0	39.0	
9.0	18.7	33.9	L
9.5	35.1	8.3	
9.3	42.0	31.4	
9.5	44.2	52.3	
7.8	46.3	47.1	L
8.5	52.4	27.3	K
9.5	53.8	24.1	
9.5	57.6	29.7	
9.4	36 2.3	1.1	
9.4	4.4	25.1	
9.4	13.2	24.1	
9.5	21.8	54.9	
8.9	22.5	40.2	K
9.4	36.6	51.3	
9.4	39.3	20.3	
9.3	40.0	48.3	
7.5	42.1	38.1	K
9.1	53.3	39.7	K
9.4	37 4.2	53.5	
9.5	5.0	55.3	
9.5	6.4	54.7	
8.4	10.3	34.6	K
9.3	13.7	15.9	
8.2	19.2	43.8	K
9.5	21.3	56.3	
8.3	37.9	48.4	Kb
9.4	40.0	52.4	
9.5	38 42.2	56.2	
9.2	43.9	12.8	
9.5	47.9	38.3	
9.1	49.3	10.7	
9.5	51.0	49.6	
8.3	56.4	40.4	L
9.5	39 9.5	59.5	
9.5	11.8	34.0	
9.3	50.9	31.4	
7.3	40 15.6	11.3	K
9.4	43.5	58.5	
9.3	46.8	26.6	
7.9	54.2	34.1	B
9.4	55.5	48.8	
9.3	56.5	59.8	
9.4	59.5	56.7	
9.3	41 17.4	32.6	
9.5	18.5	55.5	
9.5	29.5	48.6	
9.4	43.4	14.1	
	+	+	
10pr.	35.17	0.34	

m	5ᵐ	+18°	
	981—1040		
8.7	41 45.8	53.7	K
8.5	49.9	29.3	K
9.6	53.7	45.5	
9.4	42 0.9	53.0	a
8.8	3.3	52.6	K
9.0	20.5	54.0	K
7.0	33.4	30.6	B
9.5	52.3	2.1	
9.5	58.4	50.5	
7.5	59.0	22.1	L
9.3	43 9.4	14.4	
9.2	44 10.6	54.1	
9.5	12.9	0.6	
9.5	17.2	53.0	
9.2	18.3	5.3	a
9.0	34.3	6.8	K
8.8	37.0	55.8	K
8.8	43.5	56.3	K
9.5	48.1	20.3	
9.4	51.1	24.4	
7.7	58.9	7.3	K
9.5	45 3.4	22.8	
9.5	5.3	0.3	
9.4	10.5	18.7	
8.9	14.0	30.3	
9.5	19.9	5.1	
9.3	44.5	26.7	
9.1	50.3	59.1	
8.9	51.2	33.4	
8.0	51.4	52.9	K
9.4	55.7	55.3	
8.3	46 8.4	27.8	K
9.0	25.9	13.6	K
9.4	26.0	3.1	
9.4	28.6	34.1	
9.4	41.3	29.3	
9.5	47 4.2	42.0	
9.4	19.9	50.7	
9.5	25.1	15.8	
9.4	27.0	51.9	
9.3	37.9	37.2	
8.4	47.4	2.8	K
9.3	48 3.9	25.9	
9.1	6.7	53.8	
9.5	9.7	4.0	
9.0	16.2	20.3	
8.8	16.3	54.9	K
9.3	17.6	58.1	
9.4	22.7	37.2	
9.2	24.7	7.4	
9.0	29.1	20.6	
9.2	35.9	6.4	
9.2	52.4	20.6	
9.4	58.9	59.7	
9.2	49 2.9	25.0	
8.6	11.9	57.1	K
9.3	12.4	39.2	
9.2	22.0	48.0	
9.2	50 1.3	51.0	
7.5	23.4	48.9	K
	+	+	
10pr.	35.19	0.21	

m	5ᵐ	+18°	
	1041—1100		
8.9	50 23.4	27.9	
8.3	23.9	57.7	L
9.0	36.9	48.2	K
8.9	45.8	2.4	
9.0	48.9	32.5	
8.0	51 0.8	50.7	K
9.0	2.5	31.3	
9.5	17.7	16.5	
9.3	25.4	17.5	
9.5	28.9	31.6	
9.5	35.0	7.2	
9.3	37.6	2.0	
9.5	52 21.9	46.1	
9.5	40.0	23.2	
8.9	41.0	13.0	K
7.6	48.9	57.1	K
9.4	51.3	13.6	K
9.5	53 35.9	44.1	
9.2	44.8	50.4	
8.8	50.3	5.0	
8.6	51.4	0.8	K
9.1	56.4	36.5	
9.5	54 9.0	56.7	
8.3	10.4	33.0	K
9.5	10.7	50.4	
9.3	29.9	4.3	
8.1	30.6	0.4	K
9.4	54.9	45.2	
8.2	59.2	10.3	K
8.0	55 18.4	15.8	L
9.5	18.8	14.8	
9.4	23.2	14.9	
9.5	35.4	50.1	
8.5	50.2	41.9	K
9.4	52.3	42.8	
9.5	54.2	16.2	
9.4	56 8.1	55.8	
8.8	29.0	19.5	
9.0	42.4	44.9	K
9.4	44.1	12.9	
9.3	48.8	37.3	
9.3	55.5	35.8	
9.1	57.4	14.4	
8.9	58.2	4.7	
9.5	57 7.1	20.0	
9.5	34.5	16.3	
9.5	44.3	34.6	
9.5	46.6	7.4	
9.5	53.3	40.5	
9.5	57.0	42.2	
8.7	57.8	33.3	K
9.5	59.9	8.8	
9.4	58 25.4	28.7	
9.2	27.2	56.8	
8.5	48.7	48.7	L
9.5	51.8	45.9	
9.5	52.4	35.9	
8.0	59 6.9	55.6	K
9.3	18.9	35.3	
8.3	27.3	25.0	L
	+	+	
10pr.	35.19	0.07	

1101—1160					1161—1220					1221—1280					1281—1340					1341—1400				
	5ᵃ—6ᵃ		+18°			6ᵃ		+18°			6ᵃ		+18°			6ᵃ		+18°			6ᵃ		+18°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
8.8	59	30.8	40.9	K	9.5	9	28.8	4.0		9.4	18	45.2	1.1		9.5	27	58.5	24.1		9.5	38	10.8	11.1	
9.5		56.4	54.5		9.5		38.1	17.8		9.0	19	6.1	21.0		9.5	28	10.0	22.9		9.2		13.5	3.2	*b*
9.5	0	8.6	25.8		9.5		57.0	48.9		9.4		10.7	26.8	*R*	9.3		39.1	49.3		9.5		19.4	47.1	
9.5		37.7	37.4		9.5	10	9.5	0.7		7.8		11.8	18.6	L	9.4		42.4	47.0		9.5		45.5	10.0	
9.4		41.1	45.9		8.9		15.4	28.5		9.1		19.4	34.2	*a*	9.3		46.7	34.0		9.2		46.2	19.8	K
9.4		44.6	13.2		9.5		19.2	28.2		8.0		27.8	54.2	L	9.1		51.6	35.4		9.5		47.0	5.1	
9.4	1	5.6	42.1		9.5		21.0	55.8		9.5		42.1	8.1		9.5		53.7	36.4		9.4		51.5	1.0	
9.5		19.1	22.7		9.5		29.9	10.8		7.8		48.3	33.3	K	7.5	29	16.8	31.2	K	7.8		51.6	28.1	K
9.5		46.9	14.0		9.3		43.3	1.0		9.3		55.2	2.5	*R*	9.5		27.3	7.7		6.5		55.4	20.7	K
9.5	2	8.3	56.1		9.0		44.7	37.7		9.3	20	15.2	17.4		9.3		32.2	52.7		9.5		55.4	40.3	
8.2		12.5	44.0		8.6		44.7	55.5		9.1		18.5	46.5		9.5		55.4	52.7		8.9	39	26.4	22.1	K
6.8		32.6	9.4	L	9.3		48.8	4.0		8.8		29.7	23.0	K	9.5	30	5.3	44.6		9.0		42.4	39.7	
9.5		34.2	27.4		9.4		50.2	10.6		8.9		34.8	27.8	K	9.5		25.9	59.0		9.5		56.0	5.2	
9.5		35.9	53.6		9.5		58.3	40.9		8.6	21	7.4	5.8		9.5		40.8	27.0		9.3	40	0.7	28.5	Kb
8.9		38.0	12.8		9.4	11	2.0	33.3		8.8		28.9	4.8	K	9.5		41.1	23.6		9.4		12.5	29.0	K
9.5		48.3	45.9		9.3		7.8	10.3		9.0		39.0	9.5		9.5		57.4	40.1		9.3		17.1	12.8	
9.5		49.2	56.4		9.5		17.3	14.0		7.9		57.2	2.7	K	9.3	31	13.7	49.8		9.5		28.2	1.9	
8.8		57.5	16.4		7.9	12	6.5	6.4	L	9.4		59.8	55.8		9.2		17.8	44.1	*b*	9.4		39.2	40.0	
9.5	3	0.4	29.6		8.5		8.5	6.0	B	9.4	22	7.2	1.9		9.5		28.6	33.2		8.9		40.9	21.2	
9.5		3.1	46.2		9.0		9.2	35.3		9.3		14.5	40.2		8.8		34.4	10.8		8.7	41	11.8	54.6	
9.3		29.7	22.2		9.5		15.9	26.8		9.5		14.6	35.3		9.5		47.3	27.7		9.3		14.5	8.8	
9.5		36.7	52.8		9.5		31.0	49.9		9.5		22.6	30.3		9.3		57.5	14.8		7.5		22.5	8.8	K
9.2		53.5	2.8		9.4		33.6	45.8		9.5		30.1	9.8		9.5	32	10.4	21.5		9.2		26.6	2.5	
9.5	4	14.2	1.1		9.5		35.6	51.8		9.5		49.6	57.4		8.6		43.8	42.5		8.7		40.1	44.5	
9.4		21.6	3.5		9.5		36.8	27.0		9.4	23	1.9	22.6		9.3		52.5	45.0		8.0		44.0	57.4	L
9.3		42.2	4.8		9.5		38.0	53.9		9.5		7.3	41.2		9.5		54.0	34.2		9.5		49.0	6.1	
9.2		49.5	52.6		9.5		39.5	52.9		9.5		19.8	29.3	Rb	9.2	33	0.6	44.8	*a*	9.4		59.5	41.0	
9.4		54.5	52.7		9.5		44.5	46.4		9.5		45.9	45.5		9.5		6.1	12.9	*B*	8.6	42	1.4	39.7	
6.5	5	2.3	43.0	K	9.5	13	11.6	11.3	B	9.5		50.4	50.7		8.5		7.0	49.6		9.5		30.5	9.2	
9.5		2.3	5.3		9.5		25.0	18.7		9.3	24	7.2	12.1	B	9.5		9.2	32.9		9.5		35.1	24.3	
9.2		14.1	26.1	R	9.3		27.0	9.5		9.2		8.6	12.7		9.2		18.8	22.3		9.0		52.1	50.2	K
9.4		17.0	33.3		9.4		27.2	22.5		8.9		9.6	17.1		9.5		20.1	28.7		9.3		52.8	49.6	*a*
9.5		17.2	37.3		9.4		44.1	29.1		9.5		10.8	54.7		8.4		44.0	55.2	L	9.0	43	1.9	44.6	K
9.5		30.4	20.4		9.0		58.0	53.1	K	9.3		15.7	26.4		9.5		52.4	32.2		8.8		3.5	47.4	K
9.5		45.5	40.1		9.5	14	1.0	56.9		9.3		40.9	14.0		9.4	34	5.0	44.9		9.5		9.0	38.7	
9.3		55.3	16.8		9.5		8.8	23.0		9.0		50.8	53.1		9.5		7.4	57.9		9.5		21.3	8.0	
9.5		56.6	35.6		9.4		15.7	58.1		9.2		51.9	53.8	*a*	9.3		14.9	30.0	R	9.0		29.7	55.8	
9.2	6	9.4	1.0		9.5		33.5	44.7		9.1	25	2.5	41.0	*b*	9.5		18.3	19.9		9.5		34.4	6.4	
9.2		25.3	23.6		9.2		52.3	56.5		9.5		3.3	35.5		9.5		36.5	57.3		9.4		43.5	37.9	
9.5		50.0	15.2		9.1		57.4	13.1		9.5		6.1	56.3		9.4		39.3	55.3		9.2		47.9	27.6	K
6.8	7	11.8	20.5	K	9.3	15	11.0	25.8	B	9.1		20.1	10.0		9.5		41.0	3.4		9.5		54.7	47.2	
9.4		22.8	47.4	B	9.1		21.7	30.2	*aR*	9.2		20.6	50.3		8.0		42.3	5.8	K	9.3	44	5.8	18.8	
9.5		23.7	11.3		8.7		21.8	31.5		9.4		36.3	53.9	B	9.3		47.0	46.0		9.4		23.4	27.8	*a*
9.4		31.0	40.3		9.5		38.9	27.5		9.5		39.7	41.2	B	7.3		51.3	16.7	K	9.5		28.7	54.6	
9.5		32.9	50.2		9.5		48.1	42.5		8.9		46.8	50.9	K	9.5		57.5	15.1		9.5		37.8	9.0	
9.1		45.1	43.9		9.5		49.9	46.8		9.3	26	11.4	26.0		7.9	35	18.1	48.4	K	9.1		41.6	19.6	*b*
8.2		50.0	12.0	*B*	9.5	16	3.3	25.8		8.6		16.6	27.7		9.5		55.8	2.2		9.0		44.5	27.5	K
8.9		52.2	51.2	K	9.5		10.1	25.8		9.5		28.8	55.8		9.4	36	3.9	32.9		9.5		47.3	57.1	
9.5		52.8	9.8		9.4		22.2	41.4		9.2		32.5	42.6		9.1		9.4	56.0		9.5	45	13.4	35.0	
9.5		58.9	9.8		9.5		44.4	32.7		9.3		33.1	17.3		8.8		17.8	13.5		9.5		13.8	48.1	
9.2	8	5.1	25.8	B	8.9		53.5	12.1		9.0		39.0	13.0	K	8.8		31.5	51.7		9.4		26.9	8.5	
9.2		9.4	55.1	K	9.2	17	3.4	42.6		8.3		44.3	10.8	K	9.5		54.1	48.1		9.5		53.3	45.2	
9.3		18.8	27.3		9.2		21.1	46.7		9.5		46.3	28.2		9.5	37	7.5	53.6		9.5	46	0.0	22.8	
9.4		22.9	31.0		7.4		39.9	50.5	K	9.5		58.4	50.8		9.3		18.4	51.6	B	9.5		4.3	8.2	
9.1		29.8	10.0		9.3		48.6	20.2		9.5	27	11.4	37.0		9.5		23.7	1.1		9.4		8.8	55.8	
8.5		37.3	25.5	B	9.5	18	21.1	8.3		9.5		20.0	56.3		9.5		26.0	35.3		9.4		10.4	7.7	
7.5		37.3	57.7	K	9.5		24.9	44.5		9.5		22.3	14.8		9.5		40.0	34.5		9.5		26.6	22.9	
9.5		42.0	12.5		9.5		28.3	9.2		9.5		22.6	1.5		6.9		50.6	59.1	K	9.5		29.8	27.5	
8.1		43.4	44.3	Kb	9.3		39.0	44.6		8.9		23.0	0.4		8.3		52.7	21.0	K	9.5		33.5	29.8	
9.5		55.9	2.2		9.3		43.2	3.3		9.5		45.6	30.4	B	9.5	38	4.6	43.3		9.5		35.5	15.8	
		+	—				+	—				+	—				+	—				+	—	
10pr.		35.19	0.08		10pr.		35.19	0.20		10pr.		35.17	0.35		10pr.		35.15	0.48		10pr.		35.12	0.62	

1401—1460				1461—1520				1521—1580				1581—1640				1641—1700			
	6ʰ		+18°		6ʰ—7ʰ		+18°		7ʰ		+18°		7ʰ		+18°		7ʰ		+18°	
m	′	″	′		′	″	′		′	″	′		′	″	′		′	″	′	
9.4	46	57.0	53.6		55	11.4	4.0		3	20.4	2.3		12	44.0	25.6		21	37.3	55.5	K
9.5	47	2.6	23.0			20.9	34.6			20.4	14.3			51.7	57.5			43.8	13.5	
9.4		20.4	9.9			31.6	23.3			25.8	21.3		13	12.4	18.0		22	1.3	54.7	
9.3		20.5	49.9			40.8	52.8	L		52.7	53.5	K		38.7	11.7	K		13.3	07.5	
7.9		24.3	40.3	K		42.0	12.2		4	15.5	16.9	*b*		43.2	10.0	K		41.7	50.8	
9.5		27.4	43.3			54.6	19.2			19.5	18.3			47.2	25.2			44.2	58.5	
9.4		39.1	46.1			55.1	16.5	K		32.8	28.4		14	2.0	35.9			56.1	37.9	
7.7		42.0	59.1	K	56	1.9	19.9	B	5	20.9	11.5	K		9.3	13.4		23	1.4	2.2	
9.5		44.3	49.5			8.0	56.6	K		24.0	0.4			13.0	11.6			20.6	54.7	
9.5	48	4.9	5.8			12.5	23.5	α		39.0	44.1			16.2	25.4			35.3	24.2	
9.5		22.0	59.7			16.0	53.9			46.0	50.6			16.5	19.2	K		58.0	10.5	K
9.3		22.2	33.0			18.0	8.1			48.3	15.8	R		35.7	45.4		24	0.8	48.1	K
9.1		22.6	42.5			20.8	23.7	K		48.3	0.7			41.0	33.0	K		1.5	40.2	*B*
9.2		27.9	50.5			26.2	0.3			53.5	52.4			42.6	54.0			19.3	12.8	
9.5		37.5	7.1			40.7	28.6		6	8.0	6.0			43.0	19.6			22.8	15.2	K
9.5		40.5	17.0			46.6	26.5			11.8	26.1			53.0	34.6	K		25.7	23.5	
9.1		46.6	4.8	α	57	23.2	55.2			18.4	29.4		15	17.2	58.6			44.0	43.0	
9.5		54.7	22.9			32.0	6.1			23.7	48.4	K		17.9	7.8		25	7.8	56.8	
9.1		58.4	17.5			36.1	51.3			41.2	55.8			23.7	48.1			9.1	31.3	K
9.1	49	5.8	54.4			39.9	47.1			46.9	14.7			25.2	36.8	K		19.6	45.5	
9.4		14.3	4.9			49.8	55.9			48.0	39.4			27.0	37.0	K		23.4	37.1	K
9.4		15.0	7.8			57.3	16.5	*b*		57.3	38.5	*b*		57.9	59.4	*b*	26	0.8	22.2	
7.1		17.3	5.3	K	58	11.9	25.9		7	6.3	38.8			24.2	20.8	K		4.0	25.8	
9.5		30.2	26.3			19.2	19.1			7.0	49.0			30.0	58.4			13.4	28.6	
9.2		45.0	58.0			37.0	39.0	K		11.8	50.2			36.0	9.1			15.3	42.9	
9.5		53.1	59.8			56.0	33.3			12.0	19.9			52.5	37.8			21.6	10.8	
9.5		58.7	3.2			59.8	46.3			29.9	56.7	K	17	4.3	4.9			28.9	6.7	
9.0	50	8.6	4.2		59	2.2	33.0	K		30.5	27.3			9.4	1.0			32.0	1.7	
9.5		11.6	47.1			4.1	9.2			36.0	30.4			17.2	1.0			37.0	53.6	
9.5		12.3	36.3			11.4	30.1			38.1	30.6			29.0	26.0	K		50.4	10.1	
8.5		19.5	2.0	L	9.5	24.8	12.6			3.0	24.4			32.8	33.8			55.3	37.0	
9.2		20.4	58.7		9.5	35.5	48.5			7.4	33.6			40.5	59.9		27	8.3	49.4	
9.5		30.8	45.6		9.4	45.2	21.6			50.3	36.8			48.8	21.5			22.3	38.0	
9.5		37.0	32.2		9.0	45.6	5.5	R		50.7	56.7			54.6	35.1			23.5	24.7	α
8.5		41.7	54.8	K*b*	9.2	49.5	13.4	R		57.9	42.5			58.0	32.7			32.0	59.9	
9.3		43.2	38.5		9.4	56.1	30.3		9	3.8	18.9		18	0.4	48.1	K		35.4	25.7	K
9.0		43.7	55.0	K	9.2	59.6	18.4	K		11.0	48.6	*B*		0.8	25.9	K		43.2	50.9	
9.5		48.9	19.5		9.5	0 9.3	46.9			12.8	26.1			5.5	48.7	K		46.3	33.2	K
9.5		52.3	28.1		7.7	9.7	31.2	K		19.6	27.0			8.8	4.4			51.2	37.5	
9.0		54.0	1.3		9.5	14.1	5.3			21.9	37.4			36.5	10.7	K		58.1	42.3	
9.0	51	50.4	51.8		8.6	27.7	32.6	K		43.8	19.5			19.8	36.8		28	1.3	29.8	K
9.5	52	1.9	58.6		9.5	37.0	51.7			56.1	9.0			3.3	31.7			10.2	38.0	
9.0		7.3	21.8		8.5	54.8	14.0	L	10	7.3	9.6			15.8	6.4			26.8	41.2	
9.5		26.2	22.9		9.5	54.9	39.9			8.5	8.1			29.7	14.0			27.3	26.7	
8.9		29.4	8.2		9.5	56.8	20.6			11.9	29.4			43.3	15.6	K		33.3	22.2	
9.5		44.7	37.5		8.3	57.4	47.8			14.5	13.5		20	2.8	12.5			38.8	47.5	
9.5		59.4	4.1		9.5	1 7.7	56.2			20.0	26.9			7.8	4.3			42.0	1.5	
9.3	53	6.2	35.3		9.2	20.9	35.7	K		25.5	24.5			31.4	33.2			45.3	23.6	K
9.4		11.3	35.2		9.5	23.3	55.4			30.9	50.2	K		36.3	45.7			48.0	51.3	
9.4		18.0	11.8		8.5	23.8	27.8	K		43.4	30.7			37.7	38.0			54.0	3.3	
7.5		18.6	10.6	K	9.5	40.2	56.8			53.6	30.1			39.7	6.1	K	29	34.1	55.4	
8.8		43.5	10.7	K	9.3	41.4	41.2	K	11	4.4	3.5			42.8	16.3			47.9	9.6	K
9.3	54	0.0	20.7		9.1	55.4	39.8	K		4.9	53.0			47.2	49.3			56.3	43.3	
9.5		5.1	32.9		9.5	56.0	48.1			8.0	47.5			53.3	34.3			58.3	36.0	K
8.8		12.5	31.9		9.4	2 3.0	11.8			42.2	49.9		21	2.3	3.0	K	30	4.8	22.9	K
9.0		21.5	1.9	*R*	9.5	10.2	8.8			55.4	46.8			4.4	23.2			16.3	18.7	K
8.8		30.3	4.8	K	9.1	37.3	31.6	α	12	7.2	8.4	K		17.3	33.9			17.1	10.1	
9.5		46.9	54.5		8.8	42.0	49.6	K		16.4	8.6	K		20.0	33.9			33.8	0.5	
8.6	55	1.2	34.4		9.5	50.2	12.0			18.9	13.0	α		30.6	22.8			51.3	42.9	K
9.5		4.0	47.6		9.4	3 8.9	24.9			31.7	40.5			34.4	56.0	K		57.0	59.5	
		+	—			+	—			+	—			+	—			+	—	
10 pr.		*35.09*	*0.72*		*10 pr.*		*35.04*	*0.86*	*10 pr.*		*35.00*	*0.98*	*10 pr.*		*34.94*	*1.11*	*10 pr.*		*34.87*	*1.24*

1701 — 1760					1761 — 1820					1821 — 1880					1881 — 1940					1941 — 2000				
	7ʰ		+18°			7ʰ		+18°			7ʰ—8ʰ		+18°			8ʰ		+18°			8ʰ		+18°	
m		″	′		m		″	′		m	′	″	′		m	′	″	′		m	′	″	′	
5.4	31	8.1	0.3	Kb	9.5	43	30.5	41.4		9.5	53	29.3	34.9		8.9	5	48.3	26.1		9.4	17	49.0	15.1	
9.5		26.8	36.3		9.5		39.3	45.4		9.5		50.2	45.3		7.4		53.6	6.5	K	9.2	18	9.6	18.3	K
9.2		51.2	42.3		9.5		41.6	5.5		9.4	54	40.6	21.6	B	9.5		58.6	24.6		9.5		46.5	2.1	
8.7	32	3.0	55.2	K	9.5		54.8	59.1	B	9.5		42.2	13.9		9.5	6	1.5	29.5		9.4	19	7.2	40.4	
9.5		9.7	48.1		9.5	44	6.8	16.3		9.5		42.8	52.4		9.4		16.8	24.4	*a*	9.3		27.2	32.2	*a*
9.5		27.8	46.6		9.2		47.3	3.9	K	9.4		43.6	10.5	B	9.5		22.0	6.8		9.5		35.7	40.8	
9.3		45.3	23.6	aB	9.5		55.0	4.2	*a*	9.5		45.3	44.4		9.5		26.3	10.5		8.2		37 4	31.5	K
9.1		54.4	24.3	*a*	9.5	45	2.8	12.1		9.5		56.2	33.8		9.2		38.3	30.0	K	8.9	20	28.6	51.0	Kb
9.3		56.8	47.0		8.7		6.5	8.6	K	9.3	55	12.8	50.9		9.3		52.7	56.8		9.5		53.3	47.7	
8.4		59.2	33.0	K	9.5		23.6	37.2		9.3		18.6	45.4		9.5	7	2.4	28.9		9.5	21	20.3	27.0	
8.4	33	4.8	34.2	Kb	9.4		28.4	25.3		8.0		20.0	8.1	B	9.3		15.7	34.9		9.3		47.1	56.5	K
9.5		8.3	54.3		9.5		34.8	56.0		9.5		58.6	1.7		8.0		22.3	0.7	K	9.5		51.3	47.6	
8.3		18.3	23.2	K	9.1		44.8	53.8	K	9.2	56	1.2	30.8	*b*	9.5		27.7	47.5		9.5	22	3.0	35.2	
9.5		47.4	37.0		9.5	46	3.4	27.0		9.5		11.5	53.9		9.5		31.4	38.9		9.5		21.2	17.7	
9.1	34	5.4	21.5	K	9.4		4.3	22.2		9.5		38.3	14.6		9.4		39.3	23.0		9.5		35.0	51.7	
9.4		12.3	25.6		9.3		20.2	8.7	*a*	9.3		40.0	45.9	B	9.5		51.0	50.4		9.4		45.1	36.3	B
8.6		12.7	2.2	*B*	9.0		22.4	5.0		9.5		54.6	26.4		9.5	8	1.3	34.0		8.7		47.1	50.0	
9.4		34.0	55.4		7.0		27.4	27.7	K	9.5	57	1.9	30.4		9.5		9.3	48.8		9.0		50.7	25.3	
9.5		48.3	31.6		7.8		34.2	20.0	K	8.0		3.4	1.8	K	9.0		30.9	8.4		9.1		55.7	38.3	
9.0		52.2	19.0	Kb	9.5	47	9.1	0.0		9.5		16.2	39.3		8.5		35.4	31.9	K	9.5	23	0.3	14.1	
9.5	35	22.3	8.3		9.5		10.8	28.8		9.4		27.9	12.8	*B*	9.0		38.8	22.8	K	9.1		12.7	28.0	K
9.5		28.4	3.3		9.5		24.2	6.9		9.0		33 7	24.2		9.5		40.1	58.3		9.3		17.3	8.7	
8.8	36	1.3	31.5		9.5		26.2	20.1		9.5		34.8	51.6		9.4		43.0	15.7		6.0		18.6	34.6	Kb
8.7		4.6	56.4		9.2		42.8	42.1	K	9.4		55.7	19.8		9.2	9	4.3	54.5	K	9.4		31.0	50.2	
9.5		14.8	38.4		9.5		43.7	43.5		9.5	58	18.8	36.4		9.2		23.9	51.7	K	9.1		40.8	19.5	B
9.5		20.9	33.1		9.5		55.7	57 1		9.5		27.3	49.4		9.5	10	0.0	25.3		9.3		42.3	43.5	
8.7		24.5	9.2		9.5	48	2.6	33.0		9.5	59	19.4	39.6		9.5		18.2	30.6		9.5		51.1	26.7	
9.5		26.8	54.7		9.5		14.3	9.0		9.5		29.9	18.7		9.5		19.3	3.2		9.5		58.3	44.9	
8.8		40.7	23.2		9.5		18.2	38.1		9.5		34.0	7.6		8.5		32.8	46.2	K	9.4	24	2.2	22.0	
9.4		49.2	4.8		9.5		19.5	28.8		9.5		34.2	19.4		9.2		45.3	37.1	K	9.5		5.3	57.2	
9.5	37	18.9	0.6		9.1		27.3	19.8	K	9.0		46.2	24.9	*b*	9.5	11	1.3	13.2		9.3		6.4	24.7	
8.5		42.3	30.6		9.5		46.3	51.9	B	9.5		47.2	33.1		9.5		9.0	26.4		9.5		58.6	50.5	
5.1		44.5	51.9	L	9.2		50.9	33.3	K	9.3	0	2.3	23.9	?	9.5		9.0	51.6		9.0	25	26.4	7.6	K
9.5		58.1	57.8		9.2		59.4	43.9	K	9.5		3.1	54.4		9.5		18.3	45.5		9.4		31.9	18.2	B
9.4	38	1.6	49.6	B	8.0	49	10.2	29.8	Kb	9.5		4.0	9.6		9.4	12	9.0	30.2		9.4		33.2	50.2	
9.5		2.5	26.4		9.2		29.0	27.7	B	9.5		49.4	32.0		9.5		30.3	13.3		8.8		45.7	17.8	K
9.5		31.1	3.5		8.7		33.8	37.0	K	9.5	1	0.2	36.5		8.7		54.8	19.1	K	9.5		50.7	26.3	
9.3		31.2	3.8	K	9.4		34.7	31.5		9.5		34.4	47.5		9.5		57.4	6.2		7.8	26	7.2	52.4	K
9.5		36.2	36.7		9.0		39.9	4.1	K	9.5		40.4	35.5		9.5	13	5.3	39.4		9.5		29.1	15.3	
9.5	39	8.6	17.2		9.4	50	22.8	46.7	B	9.5		55.2	51.6		9.5		8.7	18.1		9.5		43.9	54.0	
9.0		10.8	11.8	K	9.5		24.5	45.0		9.5	2	39.3	31.8		9.1		10.4	7.3	K	9.2	27	9.2	54.4	K
9.5		42.6	42.1		9.2		40.6	42.7		9.5		41.2	47.2		9.5		28.3	7.0	B	9.3		16.9	38.6	K
9.5		44.9	30.5		9.5		44.8	22.2		9.5		46.0	10.3		8.2		37.8	3.9	K	9.4		20.4	4.2	
8.0	40	0.4	41.6	K	9.1		51.2	56.2	*b*	9.5	3	2.0	3.6		9.5		52 3	13.9		9.0		24.2	23.5	K
8.0		32.4	32.7	K	9.2		56.9	3.2	R	9.4		31.5	14.3		9.0	14	9.7	53.5	K	9.5		38.6	6.9	
9.2		44.2	21.9	K	9.5	51	4.6	56.2		9.5		44.2	51.6		8.4		31.8	5.4	K	9.5		43.1	58.5	
9.5		51.5	10.0		9.4		8.6	50.0		4.7		53.9	5.1	K	8.3		44.0	7.9	K	9.3		48.9	47.6	K
9.5		53.9	40.4		9.5		14.2	26.2		9.4	4	8.7	12.1		9.4		47.3	1.4		9.5		49.5	14.7	B
9.5	41	6.8	26.7		9.5		16.7	47.9		8.9		10.8	55.8	Kb	9.5	15	1.5	7.6		9.5	28	20.2	26.7	
9.5		19.6	56.2		9.5		30.3	32.6		9.1		12.3	3.1		6.5		3.8	48.4	Kb	9.5		22.5	9.2	
9.5		27.3	24.2		9.5		36.3	12.5		9.5		12.6	35.6		7.7		8.0	35.4	L	8.8		23.5	57.9	K
8.8		47.8	35.0		9.5		45.6	59.0	B	9.4		24.5	12.5		9.5		20.3	29.8		9.5		26.1	33.2	
8.8		54.2	3.1	K	9.5	52	2.7	18.3	B	9.0		24.8	27.7		9.5		31.3	34.6		9.5		44.5	15.0	B
9.4	42	36.8	26.5		9.4		2.7	22.3		9.5		44.0	6.7		9.1	16	7.5	22.1		9.5		49.5	55.3	
9.5		44.3	57.6		9.5		19.3	48.8		8.8		49 3	24.5		9.3		24.0	44.9	K	9.1		54.1	39.9	
9.1		48.8	11.1	K	7.2		21.4	37.8	Lb	9.5	5	3.9	35.5		9.5		34.6	34.6		9.5	29	0.8	7.1	
9.0		49.6	19.8	K	9.5		26.8	25.6		9.3		16.0	17.6		9.4	17	10.7	15.6	K	9.5		15.9	31.9	
9.5		58.0	2.8		9.5		38.4	38.2		9.5		17.4	7.5		9.4		20.9	47.6		9.4		17.3	3.9	
9.3	43	20.7	53.1	*B*	8.7		53.9	46.8	K	9.5		19.6	57.1		8.1		38.2	18.5	K	9.4		25.2	40.9	
9.5		27.4	16.6		9.2	53	3.9	53.3	K	9.0		43.5	10.2	K	9.5		47.1	0.8		9.4		30.7	19.8	
		+	−				+	−				+	−				+	−				+	−	
10 pr.		34.78	1.36		10 pr.		34.69	1.52		10 pr.		34.59	1.67		10 pr.		34.48	1.81		10 pr.		34.33	1.97	

1990ʰ				
9.7	28	23.3	14.6	B

2001—2060				2061—2120				2121—2180				2181—2240				2241—2300			
	8ʰ		+18°		8ʰ		+18°		8ʰ—9ʰ		+18°		9ʰ		+18°		9ʰ		+18°	
m	′	″	′		m	′	″	′	m	′	″	′	m	′	″	′	m	′	″	′	
9.5	29	58.3	15.3		9.5	43	12.1	56.5	9.0	58	47.2	12.2	K	8.5	15	58.5	48.8	K	9.5	32	18.3	34.8	
9.5	30	10.6	4.3		9.1		12.1	37.9	K	9.2		51.5	51.8	K	6.8	16	24.7	46.2	K	9.5		20.2	22.6	
9.5		18.7	40.1		9.2		14.1	47.3	K	9.5		59.3	20.9		7.0		36.0	18.8	K	9.5		25.7	5.5	
8.5		38.7	28.5	B	8.2		18.2	16.7	K	8.5	59	1.9	42.7	K	9.5	17	0.1	55.2		9.5		37.0	2.7	
9.5		40.3	28.1	B	9.5		46.0	26.9		9.5		3.1	27.0		9.5		2.0	9.8		9.5		58.5	44.2	
9.4		47.5	22.3	B	9.5		56.0	21.4		9.5		6.7	45.3		9.4		10.0	2.6	B	8.5	33	4.0	36.2	L
9.5		51.7	57.5		9.3	44	10.0	27.3		9.5		22.4	2.9	R	9.3		26.5	19.7		8.7		28.5	31.7	K
9.5		55.3	41.4		9.3		12.6	34.9		8.9	0	44.6	15.3	Rb	9.3		41.1	52.5	B	9.0		34.5	30.3	K
9.4		57.3	44.4	B	7.0		22.4	43.9	L	7.8		54.9	3.5	L	9.5		44.3	0.3	B	9.5		54.8	16.0	
9.5	31	13.0	43.7		9.5		53.9	42.5		9.5		55.5	32.4		9.5		44.5	16.1		9.5		58.6	23.1	B
9.5		23.2	18.5		9.5		57.5	4.3		9.3	1	42.7	2.4	aB	9.3		45.3	29.6		8.9	34	24.2	52.0	
9.3		26.8	6.4		9.5	45	1.3	13.3		9.4		43.9	17.3		9.4		51.1	6.9	B	9.5		28.8	43.2	
9.0		33.0	51.5	K	9.5		25.7	41.6		9.5		44.6	35.8	aB	9.5	18	44.5	5.5		9.4		31.0	7.2	B
9.5		58.2	23.2		9.5		39.0	1.0	aB	9.1	2	23.6	13.5	K	9.3		44.6	3.1		9.5		37.2	2.7	a
9.5	32	22.1	27.0		7.5		39.6	5.3	L	9.4		54.2	34.9		8.5		54.0	38.6	L	9.5		52.3	32.9	B
9.0		35.6	46.6	K	8.0		41.9	46.6	K	9.4	3	31.2	39.2	aB	9.1	19	1.0	51.1	K	9.4		59.6	35.2	
9.5		36.6	25.5	B	9.0		50.2	13.8		9.1		39.1	37.9	R	9.4		2.5	56.2		9.5	35	3.5	12.0	
9.5		49.3	28.9	B	9.0	46	6.7	20.4		6.8		48.6	38.0	Lb	9.5		34.5	12.2		8.0		10.0	26.1	Kb
9.5		50.8	30.0		9.5		55.3	40.1		9.5	4	30.1	33.5	aB	9.5		41.5	58.5		9.5		31.9	2.0	
9.4	34	19.3	53.7		9.1	47	15.6	26.1		8.7		46.6	4.9	K	9.1		51.5	16.2	K	9.3		34.8	34.4	aB
9.5		19.4	31.5		9.5		25.3	57.2		9.5		46.7	44.2		9.5		57.0	47.0		9.1		58.3	38.7	
8.3		53.1	39.9	L	8.5		39.6	13.1		9.5		57.5	26.9		9.2	20	18.6	26.8	K	8.5		59.5	20.9	K
9.5	35	11.0	38.3		9.2		52.0	50.4	b	9.5	5	0.0	31.6		9.2		20.5	23.4	K	9.5	36	5.2	12.0	
9.5		19.6	48.0		9.4		54.7	31.3	B	9.5		16.7	12.8		9.5		49.0	4.4		9.5		21.5	58.2	
8.8		24.2	38.6	K	9.5	48	5.8	41.0		9.5		35.0	52.9		9.5		56.3	37.6		8.0	37	58.0	32.4	L
9.3		58.6	25.9		9.5		23.0	45.3	aB	9.5		57.7	30.5		9.2		58.5	28.9	K	9.5	38	23.5	59.5	
4.5	36	26.6	41.5	K	8.0		35.2	3.5	K	8.7	6	5.8	51.1	K	7.5	21	29.5	15.8	K	8.0		46.9	47.6	K
9.5		38.7	52.8		9.3	49	5.1	23.5		8.9		39.9	2.1	K	9.5		41.8	10.6	aB	9.5	39	13.0	41.6	
9.5		45.3	6.4		9.5		32.2	12.9		9.5		55.3	27.0		9.5	22	9.5	45.4		9.4		29.4	1.3	B
9.0		52.8	52.0	K	6.8	50	5.8	52.0	K	8.5	7	42.9	6.7	K	9.4		20.2	47.4	aB	9.3		40.5	13.0	
9.4		56.0	6.9		9.5		27.0	24.8		9.5	8	0.5	53.0		9.5		34.6	54.1		9.5		56.5	38.6	
9.4	37	0.1	43.3		9.0		39.6	32.4		9.5		6.8	52.0		9.2		39.5	28.9	K	9.5	40	13.5	49.4	
9.3		11.2	17.0		7.0		58.7	42.0	K	9.5		8.0	38.4		9.5		43.0	53.8		9.5		22.8	20.3	B
8.3		56.9	42.5	K	9.0		59.4	38.3		9.5		44.9	14.1		9.5		51.2	21.1		7.5	41	5.0	44.2	Kb
9.5	38	4.2	57.2		9.5	51	5.7	41.0		8.2		46.8	44.8	K	9.5	23	23.0	19.8		9.5	42	10.5	53.0	
9.3		7.6	32.8		9.2		7.4	20.7		9.4		55.1	28.1		9.5	24	16.5	46.3		8.0		43.5	23.8	B
8.0		17.6	2.1	Kb	9.1		17.9	0.1	b	9.5		58.2	2.2		9.5		31.5	11.5		9.4	43	30.0	19.3	
9.5		34.1	16.2		9.5		34.2	56.0		9.5	9	10.9	55.5		9.5		48.8	59.9		8.2		39.3	9.2	B
9.5		34.8	38.5	B	9.4		51.5	51.4		9.3		49.0	31.0		9.4	25	3.1	48.4		9.0		47.7	2.0	B
9.5		40.5	38.9	B	9.5	52	36.7	7.3	aKb	8.5		51.8	39.0	K	8.4		21.2	55.3	K	9.0		52.5	43.1	
9.4		51.7	30.4		9.5		51.2	28.0		9.5	10	0.5	35.6		9.5		29.7	8.0		9.5	44	5.8	47.7	
9.3	39	17.4	55.0		9.5	54	14.9	37.6		9.0		3.8	18.7	K	9.4		50.5	19.3	b	8.8		26.5	36.6	K
8.8		36.0	34.6	K	8.3		28.1	19.7	K	9.5		21.2	18.6	a	8.6	26	31.0	36.2	K	9.0	45	23.5	4.5	K
8.3	40	10.4	11.8	K	9.4		30.7	38.3		9.5		53.6	32.5	B	9.5		38.2	1.3		9.0		26.8	20.3	K
9.3		41.8	2.8		9.0		47.0	30.5	K	7.0		54.5	17.7	K	9.5	27	35.5	12.2		8.8	46	15.5	51.7	
9.5		45.2	45.9		8.5	55	0.0	8.6	K	9.5		55.3	56.2		9.5		36.5	15.9		9.5		43.0	29.0	
9.5		58.7	46.9		9.4		3.2	48.4		9.3	11	0.7	32.4	B	9.5		48.0	43.1		9.5	47	27.5	52.6	
8.9	41	11.4	28.7	K	9.5		23.1	12.5		9.3		11.7	36.0		9.5		58.8	9.3		9.5		28.5	36.9	
9.5		44.3	53.5		9.2		33.9	28.5	aB	9.5		19.8	39.4	R	9.5	28	6.3	23.5		9.5		30.5	10.0	aB
9.3		48.3	24.7	aB	9.5		38.6	57.6		9.4		40.0	52.2		9.5		57.2	43.8		8.9		40.8	48.7	
8.9		48.3	23.0	K	8.5		40.9	33.8	K	8.9	12	39.1	9.3	R	9.1	29	6.0	28.9	aBb	7.8		57.5	13.7	K
9.5		52.6	55.9		9.5		43.5	25.3	aB	9.1		54.6	46.7	b	7.9	30	2.4	0.8	B	9.5	48	8.0	35.8	
9.4	42	3.6	23.2		9.5	56	2.7	9.1		9.5	13	3.3	11.6		9.5		18.0	6.8		9.5		32.1	10.4	
9.3		9.8	43.5	Rb	8.8		11.3	50.6	K	9.5		14.8	11.6		9.3		40.0	26.2		9.5	49	5.8	8.8	
9.5		18.2	7.3	aB	9.5		31.2	27.3		9.5	14	28.0	11.7		9.4		50.5	23.4		8.9		44.7	59.9	B
9.0		25.7	12.5		9.5		55.4	28.6		7.8		41.2	44.6	K	8.5	31	5.7	7.7	K	9.1		53.5	44.9	
7.0		28.6	32.5	K	9.5	57	4.2	18.7		9.5		46.8	46.8		9.5		17.5	23.4		9.1	50	13.7	58.6	K
9.4		41.9	2.2	aB	9.5		45.6	22.1	aB	9.5	15	20.2	6.9		9.1		24.1	13.7	K	9.3		31.0	21.7	b
8.5		44.4	33.9	K	9.5	58	7.6	51.1		9.5		32.3	24.4		9.4		33.4	4.0		9.2	51	25.5	48.3	K
9.3	43	4.8	25.4	aB	9.5		21.7	5.7		9.5		36.3	1.4	B	9.5		38.2	0.6		9.3		26.3	54.9	
		+	—				+	—			+	—			+	—			+	—	
10pr.		34.19	2.11		10pr.		34.62	2.26	10pr.		33.77	2.44	10pr.		33.57	2.58	10pr.		33.29	2.74	

2117ª				
9.6	57	21.1	57.2	B
2117ᵇ				
9.6	57	38.0	56.0	B

2301 — 2360

	9ʰ—10ʰ	+18°	
m	′ ″	′	
9·5	51 45.8	0.8	
8·9	52 16.0	8.3	K
8·0	45.5	14.8	K
9·0	47.0	32.7	R
9·5	52.8	4.1	
9·1	53 27.0	17.9	K
9·4	41.8	4.8	
9·3	46.5	27.9	K
8·0	55 46.8	53.4	Kb
9·5	48.4	2.8	
9·5	56 29.8	16.1	B
9·3	37.0	3.2	
9·1	57 10.5	15.9	K
9·5	18.0	11.1	
9·0	58 1.2	48.8	L
9·5	30.4	3.7	
8·0	44.5	35.9	K
8·8	58.5	57.7	K
9·5	59 38.4	1.7	
9·0	40.5	27.4	K
9·1	0 19.3	2.9	b
9·4	55.3	37.8	
9·3	1 42.9	16.9	
9·4	48.3	57.5	
8·8	53.9	30.9	
8·2	2 10.6	54.5	K
9·5	3 21.2	42.7	
9·2	24.3	28.3	b
9·5	51.8	25.2	
8·1	4 26.9	1.4	K
9·5	33.0	7.7	aB
8·9	5 13.1	53.3	B
8·8	6 5.2	8.4	K
9·3	13.3	57.1	
9·0	38.9	36.7	R
9·1	7 0.0	21.1	K
9·4	5.5	23.4	
7·0	8 22.9	28.4	K
9·5	9 30.8	12.9	
9·1	10 22.0	9.9	K
9·2	22.6	23.8	
8·5	26.5	6.8	K
9·4	57.2	13.3	aB
9·5	57.3	54.0	aB
7·2	11 5.6	25.6	K
9·5	10.2	52.6	aB
9·5	26.8	25.1	
9·3	47.5	27.8	aB
9·5	12 24.1	36.4	R
9·3	32.4	3.5	
9·5	13 10.6	52.8	
7·5	14 36.8	14.4	L
9·4	56.5	24.0	
8·9	15 20.1	27.4	Kb
9·5	16 8.1	27.4	
9·3	18.2	10.4	
9·4	37.8	5.9	
8·5	43.8	39.0	K
9·5	17 11.8	45.3	
8·2	19.1	14.7	K
10pr.	+ 32.88	— 2.92	

2361—2420

	10ʰ	+18°	
m	′ ″	′	
9·0	18 20.0	40.4	
9·5	29.5	17.8	
9·0	32.9	9.6	
9·5	38.2	56.7	
9·5	19 12.5	44.9	
8·7	17.6	47.9	K
9·5	20 42.1	10.6	
8·2	21 5.1	49.0	K
9·3	13.5	10.9	b
9·5	23 51.8	54.2	
9·0	53 8	27.8	Kb
7·5	24 16.1	44.5	K
9·5	25 4.1	22.3	
8·8	37.5	18.9	K
8·8	41.8	25.8	K
9·4	48.5	45.3	
9·5	27 21.8	46.3	
9·5	53.5	18.4	
9·5	53.5	22.4	aB
9·1	58.2	10.9	
8·0	28 5.1	47.7	K
8·7	29 11.0	0.6	B
9·3	37.2	47.7	K
7·7	58.9	2.0	K
9·5	31 0.7	5.4	
7·6	32 10.3	49.0	K
9·4	58.9	44.4	
9·2	33 1.8	41.4	aB
9·4	21.2	38.4	
7·0	34 44.1	59.6	K
9·3	50.2	5.4	
9·5	52.3	49.4	
9·5	35 27.0	53.8	
9·0	28.0	41.2	
9·4	37.7	33.7	
9·3	39.0	46.0	
9·3	36 3.7	17.2	K
9·5	31.9	34.1	
9·2	40.0	25.0	b
9·5	37 14.0	50.1	
9·3	17.5	36.4	aB
9·3	31.1	55.6	K
9·2	36.6	59.9	K
9·5	38 6.8	55.0	
9·5	55.0	46.4	
9·2	39 0.7	41.9	b
9·5	43.3	12.0	
8·9	41 0.8	1.1	K
9·3	53.3	25.6	b
9·0	42 0.0	50.5	K
9·5	54.0	0.4	
9·5	56.3	11.6	
9·5	44 1.1	49.1	
9·3	34.0	2.0	B
9·5	45 22.1	2.0	
9·5	24.3	11.7	
9·2	40.6	51.2	Kb
9·5	46 43.3	52.5	
9·4	47 58.3	47.7	
7·2	48 12.7	54.8	Kb
10pr.	+ 32.34	— 3.11	

2421—2480

	10ʰ—11ʰ	+18°	
m	′ ″	′	
9·3	48 27.7	54.2	
8·3	53.6	24.7	L
9·0	49 1.1	7.2	B
9·5	5.9	35.4	aB
9·5	12.0	11.0	aB
9·5	26.7	46.3	
8·0	58.8	43.8	Kb
8·0	51 17.7	29.5	L
7·0	26.0	36.7	L
8·5	53.7	47.1	K
8·9	52 17.0	16.1	K
9·1	24.6	55.1	K
8·9	53 35.8	29.0	
9·5	47.6	52.5	
9·4	54 0.6	52.1	aB
8·0	1.8	7.1	K
9·4	21.9	33.8	aB
8·3	27.6	24.4	K
9·0	43.8	50.5	K
9·5	55 40.0	51.2	
9·5	43.3	55.0	
9·4	49.4	59.9	aB
9·5	56 17.0	34.6	
9·0	39.3	40.5	Kb
9·4	41.1	17.0	aB
9·5	44.6	11.0	
9·4	56.8	20.1	
9·5	57 16.7	10.6	
9·4	29.8	56.7	
9·5	43.7	26.4	
9·4	58 9.7	54.4	
6·5	59 3.6	30.9	Kb
9·5	11.5	35.8	aB
9·5	0 19.3	10.7	
9·1	40.9	42.3	b
9·5	55.6	59.6	
9·2	1 33.4	10.8	
9·1	2 37.9	28.3	b
9·5	3 55.7	51.0	
9·0	59.0	57.0	K
9·5	4 6.5	56.4	B
9·5	25.6	5.8	
9·5	56.4	43.1	
9·4	5 3.4	39.7	
9·1	6 47.6	53.0	Bb
8·8	47.9	12.1	K
9·5	8 19.0	37.0	B
9·5	34.3	36.8	B
9·5	9 38.7	21.4	b
9·5	10 50 4	7.7	
9·5	57.9	58.2	
9·5	11 12.4	27.5	
9·0	47.2	53.8	Kb
9·5	12 25.4	48.8	
7·2	48.9	6.6	K
9·5	55.4	18.3	
8·3	13 29.3	41.0	K
9·5	14 6.4	5.6	
9·5	15.4	24.6	
9·0	34.9	35.9	K
10pr.	+ 31.92	— 3.23	

2481—2540

	11ʰ	+18°	
m	′ ″	′	
6·7	14 54.4	14.2	L
9·3	58.4	40.6	
9·4	15 4.3	58.9	
9·3	9.1	53.4	B
9·5	28.4	31.4	
9·3	16 20.5	25.3	B
9·5	48.9	41.7	
7·5	50.8	8.0	K
9·1	17 23.8	53.6	b
9·1	56.3	21.5	b
9·4	18 56.4	39.2	R
9·5	19 19.8	21.5	
9·5	20.8	18.5	B
9·5	57.9	54.5	
9·0	20 5.5	42.7	K
9·3	23.4	8.9	R
9·5	35.6	20.5	
9·5	21 9.7	39.7	
9·3	35.8	1.5	B
9·5	55.2	40.8	
8·9	22 10.6	14.0	
9·5	33.7	30.8	
9·5	45.1	9.5	
9·5	23 2.1	34.7	
7·4	57.8	33.6	K
8·1	24 29.3	57.7	K
7·5	25 17.7	48.8	K
9·5	26 20.1	48.1	
9·5	27.5	37.2	
7·5	28 8.4	40.9	Kb
9·5	35.5	7.5	
9·5	59.5	59.1	
9·5	29 30.3	15.6	
7·7	31 38.8	38.0	K
8·2	32 6.8	43.3	K
9·5	21.3	13.1	
8·7	33 15.8	30.7	R
9·5	34 29.2	22.9	
9·5	52.8	44.4	
9·5	35 11.7	9.4	
9·1	38.2	29.5	b
9·3	36 30.8	12.4	
9·5	58.2	22.7	
9·5	37 14.5	22.1	
9·4	24.5	55.9	
8·8	33.4	8.0	K
9·5	38 20.5	38.9	
9·5	55.2	8.7	
9·0	39 47.2	39.9	K
9·5	41 9.3	42.9	B
9·1	42 25.8	12.8	b
8·8	36.7	42.0	K
9·5	43 29.2	44.8	aB
9·5	39.8	34.1	
9·5	44 5.9	8.6	
9·5	13.2	27.5	
9·5	45 33.8	37.5	
9·5	46 7.9	27.2	
7·5	40.7	58.4	Lb
9·4	55.2	49.7	
10pr.	+ 31.34	— 3.31	

2541—2600

	11ʰ—12ʰ	+18°	
m	′ ″	′	
8·6	47 2.2	23.7	K
8·6	5.2	42.4	
9·3	48 19.9	57.9	
9·3	49 57.2	12.6	
9·1	50 8.5	31.0	b
6·5	15.9	16.6	K
9·3	48.5	47.8	
9·5	51 37.1	12.4	
9·3	38.4	9.6	aB
9·2	51.1	38.6	K
9·4	52 6.8	42.4	
8·3	7.7	57.7	
9·3	15.2	48.9	
9·5	17.8	41.3	
9·4	29.9	7.8	
9·5	30.5	25.5	
8·7	40.1	44.0	K
9·5	53 30.8	8.7	
9·5	35.7	49.4	
9·5	53.9	36.4	
9·5	56 1.5	45.2	
9·5	5.4	25.2	
9·1	18.5	27.6	b
8·2	57 31.3	17.5	B
9·1	41.2	34.1	
7·0	58 0.7	5.9	K
9·5	9.2	20.6	
8·0	59 50.5	24.5	K
8·8	0 4.4	12.8	
8·5	7.4	32.0	K
9·5	11.9	48.8	
9·5	23.4	9.0	
9·5	45.4	37.7	
9·5	2 32.9	38 6	
9·5	3 47.2	6.9	
9·4	55.9	47.5	b
9·5	4 57.7	2.1	
9·1	5 26.0	9.6	K
9·5	6 57.0	0.2	
9·5	7 39.4	51.3	b
9·5	50.4	23.1	
9·5	8 51.9	8.3	
9·2	9 5.9	8.6	
9·5	49.4	25.6	
9·5	10 28.9	59.5	
9·5	58.1	2.7	
8·3	11 36.0	8.5	
9·3	52.8	57.2	
8·0	12 2.9	32.8	B
8·3	42.7	5.5	K
9·5	13 13.8	59.1	
4·5	24.4	36.8	K
9·3	28.1	53.5	
9·0	34.4	30.3	
8·5	38.9	9.6	
9·5	14 19.9	31.0	
9·3	51.0	8.7	R
9·3	57.4	16.1	
9·3	15 4.4	27.5	
9·3	14.4	35.1	
10pr.	+ 30.72	— 3.34	

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	12ª		+18°			12ª—13ª		+18°			13ª		+18°			13ª—14ª		+18°			14ª		+18°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	15	22.9	54.0		9.5	39	2.9	54.4		8.8	14	32.1	59.7		9.5	39	31.5	58.9		9.5	5	37.9	11.6	
8.6	16	10.7	9.6	K	9.4		57.8	32.8		8.2		45.2	30.5	K	4.6	40	23.3	10.8	K	9.5	6	34.9	13.1	αB
9.5		20.4	58.6	B	8.3	41	15.1	22.2	K	9.2	15	16.2	34.7		9.5		23.8	45.7		9.5		38.1	20.7	
9.2		39.6	33.8		9.0		32.6	19.7	K	9.5		26.2	27.1		8.2	41	27.2	58.0	K	9.0		39.4	50.6	
9.3		49.2	18.2		9.0		38.3	31.0		8.4		49.5	31.5	K	9.5		39.8	17.4		9.4		47.5	15.8	
8.0	17	20.9	40.3	K	9.0	42	25.9	9.0		7.6	16	21.9	2.9	K	8.3	42	24.9	26.0	K	9.1		57.6	1.0	b
9.2		47.4	26.5	R	9.1	43	2.8	26.3	Kb	8.0		33.9	4.0	K	8.3		28.9	36.0	K	9.5	7	6.9	20.9	
9.5	18	7.6	59.9		8.5	44	38.6	41.7	B	8.7		42.7	57.9	L	8.7	43	26.2	32.5	K	7.6		22.7	46.4	Kb
9.5		13.9	57.9		9.5		39.0	29.1		9.5	17	45.9	1.7		9.5	44	57.4	46.1	αB	8.6		54.9	49.3	K
9.1	20	11.7	6.0	R	9.4	46	4.1	28.0		9.5	18	13 5	9.2		9.5		59.1	50.5		9.5	8	12.2	20.2	αB
7.0		15.4	38.9	K	9.3		48.3	11.2		9.5		27.5	2.3		9.2	45	13.4	5.5	K	8.5		19.3	11.0	K
9.4		55.5	28.5		9.5		52.6	40.1		9.3		30.9	30.2		9.3		25.2	44.4		9.0		20.1	19.2	B
9.0	22	1.9	19.3		9.0		56.5	9.6	K	9.5		41.7	58.3		8.6		50.4	7.1	K	9.5	9	29.2	14.0	
7.5		2.3	7.8	K	9.5	47	34.6	29.4		9.5	19	18.9	20.2		9.3	46	3.9	15.0		8.2		31.0	6.2	K
9.5		31.9	27.2		9.2		38.5	26.6	a	9.5		19.3	9.2		6.5		17.6	39.4	Kb	9.4		58.7	8.7	
8.5		34.9	43.7	K	9.5		56.8	6.0		9.0		43.2	23.6		9.0		54.9	25.3		9.4	10	7.1	28.3	
7.3		49.4	41.9	K	9.2	48	4.6	28.3	Kb	9.5	20	45.2	18.5		9.0		58.6	0.7	K	9.5		14.7	35.9	
9.5		56.4	37.8		9.3		23.2	55.7		9.5		51.5	42.0		9.0	47	24.2	54.4		9.5		30.0	5.9	
9.5	23	41.9	18.6		9.5	50	53.0	30.2		9.0	21	22.9	35.3	Kb	8.5		56.6	44.9	K	8.5		38.1	2.4	K
9.4		56.4	29.9		9.3		55.1	13.6		9.4	23	14.9	52.5		9.5	48	5.2	32.9		9.5	11	12.4	26.9	
8.9	24	5.9	30.3		8.1		56.5	32.8	K	9.5		30.9	38.1		9.5		28.9	23.2		7.9		53.8	1.7	K
8.5		45.9	28.6		4.8	51	45.9	11.5	Kb	9.3	24	6.4	52.6		8.8		38.7	0.6	K	9.0	12	46.6	18.4	K
9.5	25	33.1	58.0		9.5	53	20.1	46.3		8.3		16.9	18 8	K	8.9	49	44.2	24.5		8.7	14	1.1	9.2	K
9.2		36.9	25.8	K	9.3	54	5.1	33.5	b	9.3		31.2	33.6		7.8	50	41.3	57.4	K	9.2		4.2	41.1	b
9.5		49.4	13.8		9.5	55	1.1	33.2		9.5		47.3	48.2		9.1	51	26.9	28.6	b	9.5		13.4	53.8	
9.4		52.4	23.1		9.5	57	4.0	25.0		9.5	25	19.9	2.9		9.3	52	18.9	33.0	Kb	9.5	15	1.2	6.9	
9.4	26	12.8	47.5		9.3		10.0	6.0	b	9.3		41.6	45.2	αB	9.1		33.2	37.2	K	9.5		21.4	2.0	
9.5	27	39.5	6.3		9.5		44.0	53.2		9.5		49.2	18.8		9.3	53	11.9	59.4		9.5		27.1	25.8	
9.3		41.9	22.0	R	9.5		47.1	35.9	b	9.4	26	37.2	43.8		9.1		29.2	20.2	K	9.5		52.2	35.3	
9.5	28	6.1	6.1		9.5	59	4.6	57.2		9.5		39.0	34.7		9.5		47.3	35.5		8.0		59.5	6.7	K
9.4		26.0	1.4		9.0	0	42.7	23.1		8.1		50.2	10.9	K	9.5		52.2	47.2		9.5	16	9.8	9.2	
9.5	29	49.4	40.6		9.0		58.1	39.7		9.5		56.6	20.0		9.3	54	16.2	5.5		9.3		42.8	44.0	
9.5	30	18.4	37.2		9.5	1	1.0	2.2		8.7		57.5	12.0	K	6.8		41.3	22.9	K	9.5		45.9	9.8	
9.5		29.5	9.1		9.5		53.1	3.9		9.2		59.2	43.8	b	9.3	55	54.1	7.1		8.8		52.7	25.8	K
9.5	31	9.2	54.3		9.1	2	10.4	31.7		9.3	28	18.2	33.0		8.2		58.2	42.0	K	9.3	17	37.5	52.7	
9.2		40.2	56.2	b	8.7		23.1	14.3	P	9.4		43.9	56.5		9.0	56	30.3	22.7	Kb	9.5	18	11.4	49.7	
8.9		45.9	14.8		5.0		55.7	18.0	Pb	9.1	29	32.9	54.4	b	9.5		30.9	59.1		8.0		17.9	55.1	K
9.5	32	14.6	16.2		9.5	4	56.7	4.5		9.5		41.8	8.4	αB	9.3	58	10.6	28.2		8.8		34.0	16.6	K
9.5		31.9	45.4		9.0	5	7.8	45.5		9.1	31	20.3	48.0	b	9.5		12.1	3.8		9.1		42.0	27.4	
9.5		33.4	27.5		7.8		20.1	16.3	K	9.3		47.9	39.5		9.3		21.2	46.8		8.5		43.6	4.2	K
9.5	33	32.9	54.0		neb		49.8	56.1		9.3	32	7.0	47.9		9.5	59	1.5	51.4		9.5	19	39.6	36.5	
9.0		48.2	55.2		9.1	6	2.8	48.1	K	8.3		25.2	19.6	K	8.7		6.0	57.7	K	9.3	20	9.5	5.3	
9.5	34	6.7	8.7		9.1		8.0	48.3	K	9.4	33	3.0	36.1	αB	9.5		38.5	5.9		9.5	21	4.4	28.8	
9.5		12.0	9.8		9.5		33.0	32.6		9.3		7.2	31.0		7.0		42.2	36.4	K	9.4		40.6	50.3	b
9.5		14.2	11.3		9.5	8	12.0	36.5		9.5		10.6	4.5		9.5		58.2	10.5		9.5		47.9	56.9	
9.5		23.1	16.2		9.5		12.4	11.0		8.2		48.5	31.9	K	9.4	0	42.2	4.6		9.5	22	7.2	35.2	
9.5		36.4	20.3		8.5	9	13.9	1.4	K	9.5	34	24.5	42.6		9.1		50.1	25.6		9.5		26.2	11.0	
9.2		47.7	9.4	b	7.5		25.4	4.0	K	9.1	35	12.3	52.1	b	9.5	1	19.2	40.0		6.8	24	47.0	17.1	K
9.5	35	8.4	14.1		9.2		44.5	26.4	b	9.3		29.3	20.9	αB	9.4		45.6	41.0		9.2		46.8	51.7	b
9.3		48.7	25.5		7.7	10	27.9	3.5	K	9.5		54.5	45.0		7.3		51.3	19.3	B	9.3	25	25.9	3.6	
9.4		57.5	0.7		9.3		50.4	3.1	K	9.5	36	2.2	29.5		8.3	2	13.1	2.1	K	9.1	26	14.0	52.4	b
9.2	36	7.4	37.5		9.5	11	0.8	15.5		9.5		18.0	57.0		9.3		21.5	52.0		9.4		58.0	47.0	αB
9.5		41.3	4.5		9.3	12	12.2	33.3	a	7.8		50.6	8.1	Kb	9.5		36.8	29.1		9.4	27	8.1	54.1	αB
9.5		54.0	4.6		9.2		41.7	56.0	Bb	9.4	37	5.6	19.0	αB	8.4	3	17.4	23.2	K	9.3		16.3	16.2	
8.0	37	28.2	29.9	Kb	9.5	13	4.1	54.0		9.5		21.5	9.3		9.5		36.2	56.9		9.5		53.4	40.8	
9.5		28.6	54.7		7.3		11.9	31.9	K	9.2	38	2.7	34.3	a	8.8		55.5	58.1	K	9.3	28	40.0	2.2	
9.2	38	6.9	17.5		7.7		21.9	20.2	K	9.0		37.9	27.2		9.5	4	7.5	45.7	αB	9.5		50.9	50.7	
9.3		12.6	52.3		9.2		27.6	4.2		9.5		46.2	0.0	αB	9.3		10.4	44.4	αB	9.2		58.5	9.5	K
9.0		47.8	2.5		9.3		57.4	50.2		9.5		49.2	58.7		9.4	5	5.1	4.4		9.3	29	12.4	56.7	
9.5		47.9	38.6		9.3	14	31.5	1.2		9.5	39	17.0	40.0		9.5		25.0	44.0	αB	9.5		49.0	56.8	
		+	−				+	−				+	−				+	−				+	−	
10pr.		30.16	3.31		10pr.		29.56	3.23		10pr.		29.07	3.11		10pr.		28.59	2.93		10pr.		28.21	2.77	

19cc Pr. 2 6.9 13.4 2 8.7 13.4

DB 6.0 1855 BD ed 1903

14ʰ—16ʰ **+18°**

2901—2960				2961—3020				3021—3080				3081—3140				3141—3200			
	14ʰ	+18°			14ʰ—15ʰ	+18°			15ʰ	+18°			15ʰ—16ʰ	+18°			16ʰ	+18°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.3	29 58.0	15.7		9.1	51 21.5	16.7	K	9.5	20 33.9	12.4		9.5	46 1.4	28.7		9.5	6 19.2	4.5	
8.8	30 46.6	47.4	K	9.5	44.8	9.1		9.0	34.6	35.2		8.8	18.5	0.2	K	9.5	7 21.4	7.0	
9.4	52.6	4.0		8.8	52.5	13.0	K	9.2	34.7	44.0	B	9.5	53.7	5.6		8.0	26.6	51.4	K
9.2	31 6.6	38.2	Kb	9.4	52 11.2	44.8		7.8	45.0	7.9	K	8.0	47 14.5	2.8	K	9.1	39.1	6.8	b
9.3	16.4	11.5		9.1	14.4	7.0	K	9.5	59.9	54.3		9.0	45.6	47.3		9.5	8 3.9	15.2	
6.1	29.8	56.5	K	9.0	51.0	27.1		9.1	21 1.6	31.8	K	9.5	48 5.3	39.7		9.5	13.6	53.9	
9.5	41.8	29.5		8.0	53 22.2	34.2	K	9.3	40.9	54.5		8.8	13.7	27.6	Kb	9.3	18.7	38.5	
9.1	32 38.2	6.4	K	9.5	22.5	18.5	B	7.8	53.9	31.4	K	9.3	14.3	1.2		7.5	20.1	34.7	K
8.9	33 24.6	58.7		9.1	55 4.3	28.5	b	9.3	22 3.9	31.4		9.5	50 3.6	3.8	B	9.3	34.2	45.8	
9.5	34 7.0	32.6		9.5	37.0	8.2		9.1	10.5	2.7		9.5	19.8	42.5		9.5	45.6	13.4	
9.5	25.8	13.0	B	9.5	56 24.8	10.3		9.5	23 41.9	31.8		9.5	23.8	59.0		9.2	58.3	38.9	B
9.0	34.8	3.8		7.2	33.1	33.3	K	9.3	53.8	47.6		8.8	56.9	28.0		9.4	59.4	46.3	
8.3	59.8	13.8	K	9.5	53.8	10.9		8.1	24 13.3	6.7	B	9.5	51 13.4	2.9		8.5	9 47.9	7.9	K
8.3	35 13.1	30.0	K	9.5	57 34.9	43.9		9.3	22.9	44.2		9.5	52 6.9	31.4		9.2	50.3	1.7	
9.0	33.4	1.5		9.1	58 48.4	48.5	K	8.8	35.1	51.4		7.8	32.4	44.5	K	8.0	11 22.2	7.5	K
9.5	58.8	48.6		9.0	0 43.4	0.7	B	9.5	25 56.4	33.8		8.9	50.5	1.1	K	9.4	12 3.1	27.5	
8.8	36 18.1	41.9	K	8.3	1 30.8	26.7	K	9.5	26 10.4	27.3		9.0	53 33.9	44.2	K	9.5	59.5	51.8	
9.5	22.3	48.6		9.4	2 16.5	58.2		9.0	56.6	48.2	Kb	9.5	46.4	51.8		8.9	13 17.7	7.6	K
9.5	37.6	42.1		9.3	40.1	40.7		9.3	27 43.9	32.8		8.8	54 11.9	19.2		9.3	29.8	48.2	
9.5	45.3	31.7	aB	8.7	3 15.8	15.6	Kb	8.0	28 4.8	43.2	K	9.2	19.1	55.1		9.5	59.1	48.0	
9.1	49.4	10.2	K	9.5	4 14.3	22.3		9.5	7.9	48 7		5.0	44.2	13.8	Kb	9 5	14 6.2	48.3	
9.3	57.0	33.6		9.5	5 23.5	0.3		9.0	43.6	15.7	K	9.3	55 28.6	46.6		9.5	11.9	11.7	
9.3	37 41.1	29.6		8.9	34.9	39.2	Kb	9.0	51.7	7.0	B	9.5	28.9	9.0		8.5	50.1	11.3	K
8.5	38 9.1	13.4	K	9.5	6 10.0	41.0	aB	6.0	58.2	8.3	Kb	7.3	56 7.4	31.1	K	9.5	51.2	19.6	
9.5	19.4	32.2		9.4	28.4	41.0	aB	9.5	29 15.7	54.0		9.2	58.1	58.9	b	9.0	59.6	12.0	K
8.0	49.2	29.2	K	9.5	31.9	37.6		9.5	43.0	33.2	B	9.5	57 11.3	5.0		9.5	15 46.0	22.5	
9.2	55.2	33.4	Kb	9.5	7 0.5	55.9		9.1	30 15.4	36.5	Bb	9.5	15.9	43.5		9.2	49.3	52.0	b
8.6	39 0.6	6.7	K	9.5	26.0	42.1		9.5	31.5	16.9		6.7	18.8	12.3	K	9.5	16 9.4	54.5	
9.3	29.1	57.0		9.2	8 25.6	34.5	b	9.3	34.3	53.6		9.5	58 1.6	5.0		9.5	57.1	43.9	
9.1	40 13.9	53.9	K	9.5	29.7	5.6		9.5	31 32.1	59.2		8.9	11.7	28.7	K	9.5	17 0.0	52.9	
8.1	24.3	56.7	K	9.5	9 16.2	17.0		9.5	32 29.5	3.0		9.5	56.2	39.2		9.5	18 37.5	41.8	
9.4	31.4	15.9		9.5	45.3	46.4		9.5	43.9	51.2		9.5	58.7	50.7		9.4	57.8	51.2	
8.3	41.6	21.9	Kb	9.3	10 2.0	9.8		9.1	33 19.7	56.7		9.0	59 4.0	58.4	K	8.8	19 28.1	35.3	K
9.5	41 35.6	26.5		9.5	3.5	50.6	b	9.0	25.9	39.7	K	9.0	11.7	56.3	K	9.4	53.3	11.5	B
7.5	42 9.2	48.6	K	9.3	6.5	57.6	?	9.5	32.8	50.8		9.4	35.3	36.7		8.1	20 5.8	44.6	K
9.5	16.6	16.1		9.5	11 10.2	36.1		9.5	34 4.4	52.0		9.5	41.5	33.2		9.0	31.6	28.8	K
9.5	51.8	18.7		9.5	46.2	6.4		9.2	45.4	55.3	K	var	42.5	45.9	K	8.8	21 22.6	49.9	
9.5	55.4	51.9		9.3	12 14.0	33.0		9.1	35 2.5	11.5	b	9.5	45.2	35.8		9.4	51.0	7.9	
9.5	43 41.1	9.9		9.5	26.3	13.1	D	6.0	23.1	56.6	K	9.0	53.8	53.0		9.1	57.0	5.1	K
8.9	44 17.0	52.0	Kb	9.5	13 6.4	33.8		7.3	53.5	41.0	K	9.2	0 14.9	34.5	R	8.5	22 1.0	46.6	K
9.4	39.5	17.7	aB	9.4	20.5	18.0		8.5	36 29.1	37.3	K	9.1	18.0	44.3	a	8.5	25.1	19.4	K
9.5	49.0	35.8		9.5	24.4	37.2		9.5	37 7.0	21.3		9.5	1 3.5	46.6		7.0	30.5	44.2	K
9.5	55.2	5.6		9.0	28.0	18.7		9.5	41.8	56.3		9.5	2 24.7	1.2		9.3	54.6	33.1	
9.4	45 1.8	56.4		9.5	14 0.9	4.4		9.0	46.3	48.3	K	9.5	46.5	20.7		9.3	23 25.1	50.2	
9.5	26.8	40.5		9.4	33.7	28.6		9.2	38 9.1	58.7	b	8.0	3 12.4	49.4	K	9.5	24 12.8	7.9	
9.5	31.0	0.6	B	9.5	49.5	8.8		9.5	39 54.6	36.8	Kb	9.5	33.7	51.9		9.5	14.3	41.9	
9.4	33.3	15.6		9.5	15 2.0	22.6		9.5	40 26.4	15.6		9.5	44.2	46.3		7.9	16.1	57.1	K
7.9	38.6	23.0	K	7.7	8.1	58.1	Kb	9.1	26.4	31.4	K	9.4	51.2	36.7		9.5	28.0	58.8	
8.5	44.1	33.2	K	9.5	48.5	58.2		9.4	49.6	43.5	B	9.5	4 9.3	17.5		9.4	44.1	18.2	
9.5	46 36.4	9.7		7.5	17 4.9	22.1	K	9.5	41 25.5	3.3		9.5	10.1	5.4		9.2	25 8.5	20.5	b
7.7	42.0	50.2	Kb	8.7	13.4	36.5	K	9.5	39.4	41.1		9.5	11.7	31.6		9.4	9.9	53.4	
9.3	56.7	9.0		9.5	18 22.4	50.2		9.0	59.4	45.2	K	7.7	40.7	18.9	K	9.3	12.0	41.1	
*9.5	48 4.0	29.3		9.5	38.5	15.2		8.9	42 9.9	57.9		9.2	44.2	36.5		9.5	50.4	13.2	
9.5	15.5	11.6		9.5	45.0	55.8		4.0	12.4	36.6	K	9.3	5 9.7	31.6	K	9.2	26 21.5	5.4	
8.0	24.7	17.5	K	9.5	52.4	55.5		9.5	43 10.4	56.9		9.5	9.7	44.9		9.2	37.5	54.7	K
9.5	50 16.2	40.8	B	9.1	58.0	10.6		9.3	24.9	52.0		9.5	23.6	56.8		9.5	49.6	11.1	
9.1	18.4	32.9	b	*8.9	19 13.3	5.4	L	8.7	36.0	52.9	K	9.5	31.2	51.2		8.0	27 3.0	8.9	K
9.5	57.3	48.8		*9.2	30.0	25.4		9.4	42.7	58.9		8.5	33.7	21.6	Kb	9.3	48.5	50.8	
9.5	51 5.6	6.2		7.5	33.3	41.4	K	9.5	44 16.9	38.3		8.5	37.8	11.3	K	9.1	28 18.1	27.4	b
9.5	20.2	24.7		9.0	20 15.5	13.8	K	9.5	46.1	55.7		9.4	56.6	56.9		9.4	43.6	17.8	
10pr.	+ 27.84	— 2.56		10pr.	+ 27.43	— 2.27		10pr.	+ 27.15	— 2.01		10pr.	+ 26.86	— 1.89		10pr.	+ 26.69	— 1.44	

2952 a				3017 a			
var	47 37	17.1		10.0	19 27.6	9.1	B

1905 d 5.1 11.6
pm

3201—3260

	16ª		+18°	
m	′	″	′	
9.5	28	59.7	22.7	B
9.5	30	0.5	27.7	
9.4		14.6	16.4	
9.5		44.9	55.0	
9.0	31	13.5	34.3	K
8.2		35.6	2.4	K
9.5	32	14.7	6.7	
9.5		21.1	33.9	
9.4		55.5	28.0	
9.1		59.6	29.7	R
9.0	33	25.0	48.7	
9.0		30.1	31.6	
9.5		39.0	36.7	
9.1		47.3	15.0	b
9.0		49.0	29.1	R
8.8		57.6	36.3	
9.0	34	14.1	16.0	K
9.3		42.7	36.7	B
9.5		51.7	32.8	
9.1	35	8.8	0.3	b
9.3		27.6	26.4	
7.8		30.3	55.1	K
9.2		56.1	49.8	
8.7		58.8	47.3	K
9.4	36	18.0	18.8	
9.5		50.0	42.8	
8.1	38	2.5	50.4	K
9.5		19.8	11.0	B
9.5	39	5.5	52.2	
9.5		6.1	35.0	
9.5		11.0	26.7	
9.5		14.0	38.0	
9.5		32.4	44.6	
9.3		34.8	36.9	
9.5		45.1	46.0	
8.3		50.0	6.8	K
8.3	40	28.1	11.6	K
8.9		38.1	38.0	
8.3		41.0	11.9	L
9.4	41	10.8	57.6	
9.0		21.7	7.8	K
9.3		30.0	34.6	
9.5		38.3	52.7	
7.0	42	18.8	34.5	Lb
9.5		45.4	0.1	
9.4		49.6	27.4	
9.5		59.1	36.3	
9.5	43	15.0	24.0	
9.3		25.1	47.7	
9.3		28.0	36.7	
9.5		40.7	17.8	
8.8		58.6	37.5	K
9.3	44	23.1	8.5	
9.1		36.4	51.9	
9.3		42.3	0.6	
7.0		44.0	19.2	K
9.3		50.6	17.8	
9.3	45	51.7	4.3	
9.2		55.5	47.4	
9.2	46	14.5	28.1	K

	+	—
10pr.	26.53	1.15

3261—3320

	16ª—17ª		+18°	
m	′	″	′	
6.5	46	16.5	18.8	K
9.5		39.4	42.7	
8.8	47	38.5	33.2	K
9.5		58.0	22.6	
8.2	48	3.1	58.3	K
4.8	49	0.6	40.7	Kb
8.8		2.5	18.4	K
9.5		41.5	8.8	
9.5	50	22.8	44.9	
9.5		23.6	51.5	
7.3		38.1	28.4	K
9.5		50.0	7.5	
9.4	51	14.6	45.9	
9.5	52	13.5	45.2	
9.1		26.5	34.9	b
9.4		31.6	58.4	
9.1		35.7	45.3	
8.0	53	9.6	46.2	K
9.5		16.0	53.3	B
7.0		25.8	1.4	K
8.8		31.6	39.4	
9.3		35.0	10.7	
7.7		58.5	8.1	K
9.5	55	6.5	22.3	
9.4		37.6	17.1	
9.4		40.5	6.4	
9.3		48.1	51.8	
8.8		54.8	48.6	Kb
9.3	56	13.0	4.8	
9.0		18.0	13.7	K
9.0		25.8	20.5	K
8.7		54.6	32.4	R
9.1	57	7.6	7.3	K
9.2		9.1	56.0	
9.1		18.0	26.3	
7.8		23.5	29.1	L
9.2		55.6	45.6	
8.5	58	1.4	53.4	
9.5		29.1	28.0	
8.3		44.8	11.8	K
8.9	59	6.9	59.8	Kb
9.5		52.3	21.9	
9.5	0	1.8	39.3	
8.0		3.0	4.6	K
9.5		24.3	1.6	
9.3	1	31.9	46.5	αB
9.1		32.8	45.9	αBb
8.7		32.9	2.9	B
9.5		44.7	9.4	
9.5	2	9.9	3.8	B
9.5		35.3	15.0	
8.5		48.0	22.5	K
9.1	3	23.1	47.2	K
8.3		24.3	6.4	K
9.3		49.1	16.3	B
9.4		50.0	33.8	
9.5		50.2	54.0	
9.2		53.3	11.5	K
9.5	4	3.8	54.2	
9.5		8.8	23.2	

	+	—
10pr.	26.42	0.92

3321—3380

	17ª		+18°	
m	′	″	′	
9.5	5	8.3	13.6	
8.4		9.1	8.4	K
7.5	6	14.3	31.5	K
9.0		19.5	14.3	K
9.0		19.6	20.5	
9.5		54.8	38.0	
*9.4	7	8.4	58.4	B
9.5	8	13.3	51.4	
9.4		25.8	28.8	
9.1		40.0	30.5	
9.5		54.5	8.2	
9.5	9	23.9	5.8	
9.5		28.3	58.4	
9.3		33.5	47.6	K
9.5	10	6.8	27.3	
7.5		8.5	11.1	K
9.5		9.8	39.7	
9.1		38.8	34.2	b
9.5	11	13.3	41.0	
9.3		14.3	33.2	
9.2		26.8	20.8	
9.4		33.0	19.5	
9.5	12	21.5	34.3	
8.7		28.1	7.0	K
9.4		48.3	2.9	B
9.3		57.3	49.6	
9.0		58.0	45.4	K
9.2		59.0	10.2	B
9.4	13	15.3	16.1	
9.0		52.8	32.4	K
5.5		55.8	14.0	K
9.5	14	12.8	59.8	
9.5	15	12.5	38.2	
9.5		14.0	10.2	
9.2		46.8	22.8	
9.1	16	21.0	0.9	K
9.5		47.1	35.2	
9.5	17	13.7	20.6	
9.5		22.3	27.0	
9.4		23.6	10.8	
9.5		34.0	53.1	
9.5		38.5	42.1	
7.5		40.1	59.4	K
9.5		55.1	58.0	
9.2		56.7	9.0	K
9.0		57.9	20.7	R
9.5	18	4.6	8.5	
9.4		14.6	21.9	B
9.1		28.3	51.0	
9.5		46.5	46.2	
9.5		50.3	2.9	
9.5	19	21.3	52.3	
9.5		55.6	41.4	
9.5	20	22.3	19.4	K
9.1		40.0	25.7	B
9.1		46.5	5.5	R
7.6		53.8	2.6	K
7.9	21	0.8	15.7	K
8.4		26.4	53.6	K
9.5		36.8	57.1	

	+	—
10pr.	26.33	0.67

3381—3440

	17ª		+18°	
m	′	″	′	
9.5	22	5.3	53.5	
9.5		5.6	3.0	
8.3		19.3	17.7	K
9.5		21.1	0.0	
8.6		38.3	15.3	K
9.2	23	25.0	23.2	
9.5		44.0	50.5	B
9.4	24	25.3	34.5	
9.0		25.8	47 9	
9.0		28.3	26.0	K
9.0	25	33.3	43.1	
9.5		48.6	54.9	
7.8		58.3	28.7	K
9.5	26	18.6	2.5	
8.3		21.3	21.7	B
9.0	27	13.8	28.1	K
9.1		14.3	13.0	
9.5		23.0	25.9	
9.1	28	12.0	15.3	
9.5		26.4	17.4	
9.5		36.0	36.3	
9.2		36.7	2.7	
9.3		37.9	32.8	
8.0		40.4	19.3	L
9.3		42.2	22.2	B
9.0		54.5	18.7	
9.1		59.4	59.6	
8.6	29	23.0	38.6	K
9.5		29.7	19.7	
9.5		30.1	4.5	
9.4		56.7	12.1	B
8.4	30	3.0	38.2	K
9.4		4.7	47.4	
9.5		8.5	2.2	
9.5		25.5	49.8	
9.1		27.0	25.6	K
8.8		31.2	1.6	
9.5		36.3	2.0	
8.6		53.4	22.9	K
9.5		58.3	52.9	B
9.5	31	9.5	28.4	
9.5		56.0	31.1	
9.0		57.4	39.0	
9.2	32	23.1	38.5	αB
9.5		26.5	16.0	
9.0		41.4	36.0	
9.1		45.5	26.7	K
8.0		59.7	5 6	Kb
8.9		59.9	25.7	B
9.0	33	1.9	17.4	B
9.5		4.7	29.8	
9.5		28.2	36.3	
9.2		51.0	56.9	K
9.5	34	2.5	42.1	
9.5		15.0	29.7	
9.3		24.0	25.6	K
8.8	35	15.5	15.0	K
9.3		19.4	41.8	
9.0		38.5	23.6	
9.5	36	12.4	21.8	

	+	—
10pr.	26.28	0.44

3441—3500

	17ª		+18°	
m	′	″	′	
9.5	36	16.7	50.3	
9.3		24.1	0.4	
9.4		24.9	55.0	
9.5		51.3	0.8	
8.1		59.5	53.6	K
9.4	37	22.6	3.8	
9.5		27.0	40.8	
9.5		29.7	34.2	
9.5		33.4	32.4	
9.5		47.0	3.6	
9.4	38	17.9	18.0	
9.5		38.5	51.5	
9.2		53.6	5.9	K
9.3		58.2	47.6	B
9.2	39	5.9	50.9	
9.3		58.2	36.3	B
8.9		58.8	41.8	
8.8	40	1.5	44.5	B
9.5		2.5	48.1	
9.5		21.0	2.0	
8.9		38.9	17.2	B
9.0		42.2	43.1	B
8.9		52.6	28.7	K
6.5	41	13.5	57.0	K
9.3		21.0	53.1	
9.3		26.3	37.0	
9.0		28.5	31.8	
8.7		38.7	25.6	K
9.5		38.7	3 0	
9.1		50.4	55.2	K
9.5	42	4.5	49.6	
9.0		13.4	10.8	
8.3		42.5	28.7	Kb
9.5	43	2.0	53.1	
9.3		3.4	11.2	
9.5		14.5	28.6	
9.5		20.1	80.1	
9.5		57.4	28.8	
9.0	44	25.3	54.1	K
8.0		37.9	23.5	K
9.5		43.9	52.5	α
9.2		51.0	56.3	Kb
9.4	45	2.3	33.7	
9.5		7.5	40.5	
9.5		11.4	27.5	B
9.4		19.7	23.3	
9.2		23 2	7.1	
9.4		46.9	41.4	
8.9	46	5.4	42.1	K
9.5		22.1	11.4	
9.4	47	17.8	20.9	
9.1		24.5	46.9	
8.5		37.4	36.3	R
9.0		39.6	35.3	R
8.0	48	20.2	12.9	L
9.5		40.6	53.9	
9.0	49	24.5	31.5	K
9.2		28.4	57.5	
9.3		41.6	1.1	
6.8	50	4.3	22.1	K

	+	—
10pr.	26.26	0.26

3326a
9.7 | 7 | 1.3 | 53.9 | B

DB 6.0 1855 BD ed 1903

3501—3560

	17h—18h	+18°	
m		′	
9.2	50 7.6	17.5	B
6.5	16.3	38.8	K
9.0	27.3	55.2	K
8.9	29.6	58.9	K
9.5	38.7	53.2	
9.0	51 0.7	6.2	K
9.3	3 0	59.8	
9.5	28.4	56.6	
9.4	38.2	40.2	
9.0	43.0	43.3	
9.4	45.9	8.4	
8.7	49.0	26.7	K
9.1	52 15.4	11.9	
9.0	20.2	53.9	Kb
9.5	52.1	7.4	B
9.1	52.8	53.1	K
9.5	58.4	16.3	B
9.5	53 2.9	41.8	
9.4	11.5	57.5	
8.8	38.5	43.2	K
9.5	47.0	29.8	
9.5	47.4	22.9	
9.5	53.9	38.4	
9.5	54 3.0	5.8	
9.2	31.1	0.0	b
9.5	32.5	28.8	B
8.5	44.2	58.2	K
9.5	55 0.4	54.5	
9.5	36.2	30.4	
8.7	42.8	53.1	
9.5	56 7.3	50.0	B
9.5	18.5	41.8	B
9.5	42.0	33.2	
9.0	49.6	41.9	K
9.4	57 8.0	8.0	
9.4	19.7	17.9	
9.5	19.8	12.6	
9.0	42.0	16.2	
9.3	42.8	35.0	
9.3	45.3	36.8	B
8.7	59.0	47.7	Kb
9.5	58 21.0	56.2	
9.0	29.0	21.5	B
9.3	35.9	18.0	
8.5	59 12.9	27.0	K
9.0	24.6	7.8	K
9.2	40.5	52.9	
9.5	46.0	0.0	
9.5	50.4	32.5	
9.3	0 7.5	56.8	
9.4	18.8	15.0	
9.5	44.7	58.0	
9.4	51.8	2.2	
9.5	57.7	56.9	
9.4	1 16.6	5.9	
9.2	24.7	34.4	
9.5	26.2	54.5	
8.1	26.3	51.6	K
9.4	27.5	23.6	
9.0	35.2	44.2	
	+	—	
10pr.	26.24	0.06	

3561—3620

	18h	+18°	
m	′ ″	′	
9.4	1 58.5	14.2	
9.4	58.6	34.1	
9.5	2 8.4	0.5	
8.3	10.4	55.9	K
9.5	17.0	6.4	
8.0	17.9	36.0	K
9.5	28.6	0.6	
9.5	52.5	56.6	
9.1	58.7	24.6	
9.4	3 3.9	41.2	
9.5	6.3	36.0	
9.1	6.6	24.8	
9.3	12.2	0.3	
9.3	38.4	22.2	
9.5	44.5	8.6	
9.4	50.8	24.0	
9.4	54.7	27.4	
9.0	56.9	14.6	
9.5	4 12.7	46.9	
7.7	14.8	16.2	L
9.5	16.6	55.9	
7.2	23.5	28.5	K
9.5	23.8	42.9	
9.3	47.9	45.7	
9.5	5 9.9	36.5	
8.5	12.3	17.9	Kb
9.5	25.1	1.1	
9.5	28.9	1.2	
8.6	54.7	5.8	
9.5	6 23.0	44.9	
9.3	29.3	47.8	
9.4	34.9	41.7	
8.4	44.1	38.5	R
8.3	7 37.7	12.3	
9.4	42.0	58.0	
9.5	46.2	22.4	
9.1	50.6	12.1	
9.5	55.0	30.9	
9.3	8 12.7	43.3	
9.4	27.4	41.2	
9.3	27.8	50.2	
9.5	32.4	43.8	
9.5	33.2	8.7	
7.8	37.0	25.9	K
9.5	45.3	1.9	
9.4	56.6	26.9	
9.5	9 5.2	55.1	
9.5	17.4	2.2	
9.5	26.6	54.6	
8.0	51.5	52.2	K
9.5	10 6.0	40.9	
9.5	8.3	29.4	
9.5	9.6	23.8	
9.5	10.7	15.6	
9.0	29.2	8.6	R
9.4	43.3	49.8	
9.5	52.9	25.2	
8.6	53.0	58.8	
8.7	59.7	3.9	R
9.1	11 10.9	32.9	b
	+	+	
10pr.	26.25	0.10	

3621—3680

	18h	+18°	
m	′ ″	′	
9.3	11 13.2	12.7	
9.4	14.6	47.6	
6.4	45.7	4.9	K
9.5	50.4	42.4	
9.2	12 2.5	27.2	
8.0	11.4	19.6	K
8.8	11.8	49.8	
9.5	23.0	5.8	
9.5	30.8	1.3	
9.2	35.3	26.0	K
9.3	36.2	57.5	
9.2	53.8	44.6	K
9.5	59.0	30.4	
9.4	13 4.0	57.3	
9.1	10.2	7.6	
9.5	16.5	33.6	
9.4	16.8	35.6	
9.5	17.2	43.8	
9.4	23.4	50.0	
9.4	28.4	57.4	
9.5	39.2	32.0	
8.8	40.9	20.2	
9.5	14 14.2	8.8	
9.5	21.8	55.2	
9.5	23.3	30.3	
9.5	30.8	42.8	
9.5	31.2	40.0	
9.4	34.9	33.5	
9.4	37.3	45.0	
9.4	15 2.2	6.2	
8.9	2.4	39.3	
8.9	10.8	6.4	K
9.5	14.5	42.5	
9.2	27.8	5.5	
9.2	41.0	15.6	R
9.5	16 10.8	38.1	
9.3	12.1	39.8	
9.1	13.5	52.8	b
9.1	28.2	55.6	
9.5	30.3	9.4	
9.5	53.9	9.7	
9.4	17 3.2	12.4	
9.5	9.4	44.6	
9.2	24.1	53.4	
9.5	34.1	25.0	
9.5	36.0	34.3	
9.2	18 2.2	4.7	R
9.5	17.8	59.7	
9.2	20.2	30.9	
8.8	24.3	48.9	
8.8	30.7	10.9	
9.5	31.0	8.9	
9.2	39.1	7.0	
9.1	45.3	24.4	b
9.3	57.5	10.1	
9.2	19 7.2	54.8	
9.0	11.9	54.6	K
9.5	15.4	12.8	
9.5	15.6	33.5	
9.0	31.2	4.6	K
	+	+	
10pr.	26.26	0.22	

3681—3740

	18h	+18°	
m	′ ″	′	
9.5	19 39.8	33.6	
9.5	47.5	22.9	
9.5	49.4	28.9	
7.8	56.5	47.2	K
8.6	20 6.0	54.5	K
9.3	7.4	28.2	
9.5	9.5	31.4	
9.5	15.5	11.5	
8.3	42.0	15.3	R
8.1	45.2	55.6	K
9.5	59.3	16.1	
8.3	21 0.6	10.4	
7.7	4.1	38.8	L
8.6	9.8	56.5	K
8.8	20.5	31.0	
9.3	34.4	7.5	a
9.0	37.7	3.3	K
9.0	46.8	7.4	
9.1	22 7.5	1.8	
9.5	25.4	51.7	
9.5	29.6	21.1	
9.5	33.3	8.8	a
9.5	39.6	54.7	
9.4	58.4	3.1	
9.3	23 3.9	57.8	
9.5	33.8	35.8	
7.7	42.6	29.8	R
9.5	24 30.5	35.2	
9.0	50.5	12.9	
9.4	55.9	58.8	
9.5	58.9	8.7	
8.1	25 15.6	1.0	B
8.5	16.7	6.6	
9.0	22.2	44.6	
9.5	35.3	44.8	a
9.5	37.5	53.7	
9.3	49.0	58.0	
9.5	51.1	9.2	
9.5	26 2.8	53.7	
9.5	16.9	11.3	
9.0	20.3	40.0	R
9.2	21.0	46.4	
9.4	21.7	51.7	
9.5	22.5	54.6	
8.6	24.7	8.7	K
9.5	30.7	16.1	
9.3	42.2	51.6	
7.1	54.8	49.0	L
9.4	27 7.4	4.2	
8.5	9.2	22.3	K
9.1	10.8	27.0	K
9.5	48.3	42.6	
9.5	51.4	55.1	
7.0	59.5	34.9	K
9.5	28 4.4	12.6	
9.5	13.8	8.3	
8.5	15.7	0.3	
9.1	46.7	35.5	K
9.0	46.9	0.6	
6.1	49.2	5.4	K
	+	+	
10pr.	26.27	0.36	

3741—3800

	18h	+18°	
m	′ ″	′	
9.5	28 52.3	47.4	
9.5	29 33.1	17.7	
9.5	54.2	35.5	
9.4	30 1.4	16.8	
9.5	1.8	7.1	
8.9	17.2	53.1	
7.6	29.5	49.6	B
8.7	30.4	12.6	L
9.3	32.3	28.4	
9.2	47.1	57.7	
9.4	47.1	50.8	
9.3	47.6	32.2	
9.4	58.7	28.1	
9.1	31 5.5	22.1	a
8.1	11.9	37.8	L
7.5	25.8	19.1	Lb
9.5	49.5	30.0	
9.2	54.0	45.7	
9.2	55.4	23.0	
9.5	56.9	54.5	
9.4	32 3.2	57.3	
9.4	20.6	7.8	
8.8	21.3	18.5	
9.5	23.5	38.9	
9.5	24.8	30.1	
9.4	34.4	48.6	
8.1	43.2	33.9	L
9.0	52.7	46.6	
9.3	33 5.9	10.4	
9.4	7.9	12.1	
8.8	10.8	54.8	
8.6	12.4	27.7	Lb
9.5	41.1	23.2	
8.2	56.5	8.1	K
9.4	34 58.2	29.8	
9.5	35 22.9	55.8	
9.0	33.0	47.8	
9.5	36.3	1.0	
9.3	55.1	33.7	
9.3	36 31.5	7.7	
9.3	33.4	31.6	
9.5	34.4	42.6	
9.5	36.7	44.7	
9.5	42.0	26.5	
9.5	53.1	11.2	
8.5	57.3	38.6	R
9.5	59.6	48.0	
8.5	37 14.5	45.0	
9.3	18.7	9.0	
9.5	27.0	38.2	
9.5	36.3	26.7	
8.3	42.4	31.0	K
8.4	49.8	44.8	
8.9	51.0	3.2	K
9.5	38 17.8	4.7	
9.5	18.1	19.2	
9.4	18.4	12.4	
9.0	19.9	37.0	Kb
8.9	21.0	43.6	
9.5	22.1	38.4	
	+	+	
10pr.	26.29	0.48	

3801—3860					3861—3920					3921—3980					3981—4040					4041—4100				
	18ʰ		+18°			18ʰ		+18°			18ʰ—19ʰ		+18°			19ʰ		+18°			19ʰ		+18°	
m	° ′ ″		′		m	° ′ ″		′		m	° ′ ″		′		m	° ′ ″		′		m	° ′ ″		′	
9.5	38	27.5	57.3		8.4	47	12.8	49.9		9.5	55	33.6	14.2		8.1	6	5.7	57.5	K	9.4	14	34.8	2.9	
9.4		32.5	44.3	*a*	9.4		32.2	59.5		7.1		36.8	54.8	L	9.3		18.3	18.9		9.3		36.4	14.8	
9.2		34.6	18.8		9.5		46.1	15.3		8.7	56	1.8	51.3	R	8.8		18.9	33.3		6.8		37.3	52.5	K
9.5		37.4	37.2		8.5		47.6	8.6	K	8.5		3.8	21.0	L	9.3		26.1	59.9		9.5		43.4	24.9	
9.5		39.4	40.1		9.5	48	0.7	33.4		8.1		19.7	9.8	K	8.3		40.8	53.7	K	9.3	15	6.8	23.3	
8.4		52.6	58.6	B	9.2		2.3	0.2	*a*	~~6.8~~		~~22.4~~	~~47.1~~		8.9		41.0	15.7		9.5		29.0	9.2	
8.9		56.0	49.5	K	8.3		7.8	25.7	K	9.3		24.7	54.1		9.0		41.2	23.3		9.5	16	0.9	43.4	
9.4		56.8	39.9		8.5		22.1	46.9	K	8.5		24.8	47.7	R	9.5		55.2	20.8		9.4		39.0	39.3	
8.3		57.5	9.8		9.5		25.8	42.1		8.9		25.9	34.6		9.4	7	4.6	43.5		9.5		39.4	46.6	
8.6	39	4.1	2.3		9.5		51.6	3.1		9.4		37.3	5.1		9.3		14.1	16.0		9.5		46.9	26.0	
8.7		17.5	47.2	K	9.5		57.0	23.3		9.0		40.9	59.1	K	9.5		21.2	20.3		9.4		50.4	13.1	
9.5		20.4	53.8		9.2	49	11.2	8.7		9.2	57	0.5	10.4		9.0		23.7	44.2	K	8.7		58.5	34.2	R
9.4		35.3	8.5		9.3		11.5	32.6		9.2		2.3	10.0		9.5		25.2	46.9		9.5	17	6.7	30.3	
6.9		42.7	19.7	L	9.5		25.0	29.7		9.5		22.6	10.3		8.7		33.7	2.9		9.3		11.7	44.7	
9.2		44.5	19.8	*a*	9.2		37.9	34.7		9.0		24.1	4.2		9.0		42.4	30.0		7.3		48.0	27.9	*B*
9.2	40	6.8	39.9		9.1		38.2	44.7		9.5		30.5	7.9		8.0		47.0	11.9	L	9.4		53.9	26.4	
6.4		19.6	33.0	L	9.2		42.8	38.9		8.8		33.1	48.5		9.2		50.6	24.1		9.5		57.8	40.1	
9.0		20.6	57.7		9.5		48.3	15.6		9.0		49.1	33.8		7.0		53.8	49.4	K	9.4	18	3.0	4.0	
9.0		22.7	48.5	K	9.3		50.4	37.5		8.8		56.0	8.1		8.7		56.1	37.6		9.5		6.7	57.9	
9.5		29.0	0.7		9.5		50.6	26.9		8.2		58.5	32.7	*B*	9.5	8	18.6	19.5		9.5		17.9	19.6	
9.5		31.8	20.1		9.3		55.3	36.6		9.5		59.4	52.7		9.4		24.0	19.0		9.5		19.5	49.0	
9.4		34.0	47.3		8.2		56.6	11.1	R	9.0	58	17.2	21.5		8.0		28.9	14.3	L	9.5		23.0	49.0	
4.1		37.3	1.6	K*b*	9.2	50	3.2	12.0		6.5		31.3	55.8	R	9.3		33.5	41.5		8.3		38.0	22.1	L
9.4		39.5	23.3		9.3		24.6	57.2		9.3	59	0.8	59.1		9.3		36.6	9.3		9.3		42.3	55.3	
9.0	41	25.8	56.9	B	7.7		58.0	39.7	*B*	9.3		17.0	6.0		9.4		40.1	11.6		9.3		42.6	34.3	
9.1		56.7	57.2		9.5	51	1.0	41.7		8.8		22.2	52.0	K	9.4		43.3	23.1		9.5	19	5.7	48.9	
9.5	42	1.3	33.4		8.1		2.9	24.5	L	9.5		27.9	19.3		9.2		47.3	21.2		9.5		14.4	24.4	
9.3		5.5	40.9		9.5		4.7	6.6		9.5		28.0	23.5		9.1		54.9	40.7		9.4		14.7	14.3	
9.0		29.6	41.2		9.4		8.0	24.0		8.9		31.8	53.1	K	8.5		59.6	46.6	K	9.2		19.0	3.3	
8.7		45.7	58.6		9.5		19.2	4.9		9.5		33.3	32.5		9.3	9	1.5	57.8		8.7		20.7	8.5	
9.4		57.1	10.3		9.3		22.0	25.9		9.1		38.6	53.4	K	6.3		9.7	16.3	L	9.5		33.7	59.7	
9.2	43	5.3	53.7		9.4		28.1	4.6		9.3		52.8	48.2		9.5		19.9	24.3		9.3		34.0	54.2	
8.8		6.7	1.3	K*b*	8.0	52	6.3	19.8	K	9.5	0	25.3	33.2		9.5		44.6	57.4		9.3		37.0	34.0	
9.3		16.5	38.8		8.0		7.6	41.8	*B*	9.4		28.9	25.1		7.0	10	25.7	43.8	L	9.2		59.4	21.6	
9.5		36.3	59.8		9.5		7.9	43.4		9.4	1	2.2	48.2		8.3		30.8	33.6	K	8.2	20	1.1	42.5	*B*
8.1		53.6	14.3	K	8.8		9.1	47.9		9.5		3.3	10.3		9.3		47.0	21.1		9.3		5.7	56.9	
9.5	44	3.0	47.9		9.3		23.2	26.7		9.5		7.0	47.2		8.9		50.6	37.9		9.4		6.4	25.3	
9.5		5.2	49.5		9.5		24.5	36.1		7.5		9.8	19.3	*B*	9.2		50.9	5.5		9.5		7.2	20.0	
9.5		36.3	55.0		9.5		32.3	4.2		8.9		11.2	57.3	*B*	9.3	11	8.6	48.4		8.7		27.4	0.7	
9.2		41.4	45.4		9.5		36.6	4.2		9.5		12.3	43.8		8.0		14.8	54.0	K	9.5		31.3	35.0	
9.3		45.9	59.8		8.8		40.7	59.4		9.5		12.8	11.2		9.2		22.0	7.8		9.3		42.5	26.4	
8.5		53.4	30.1	K	8.2		54.1	29.9	K	9.5		22.5	56.9		9.2		25.0	8.1		9.5		47.2	25.6	
9.5		59.6	52.9		9.5	53	14.2	54.8		9.3		31.1	9.5		9.5		26.7	37.2		9.0		57.7	19.2	
8.5	45	0.0	19.8	K	7.7		14.2	14.0	L	9.2		36.3	13.0		7.7		27.0	35.3	K	9.1		58.5	7.7	
9.1		4.8	1.1		8.3		14.9	43.4	K	8.8		58.5	5.6		9.5		48.1	11.3		9.1	21	0.5	0.2	L
8.8		5.0	20.9	K	9.1		22.1	5.3		9.5	2	30.1	59.0		9.4	12	6.4	14.1		9.2		1.0	6.3	
9.3		9.0	44.4		8.8		43.6	32.1	R	8.0		30.7	22.9	K	9.5		15.0	57.4		9.5		17.6	55.1	
9.1		17.2	5.4		9.5	54	7.0	39.1		9.5		44.5	50.0		9.5		27.3	1.8		9.4		19.4	6.7	
9.0		59.5	8.3		7.5		10.3	16.0	L	9.5		53.8	51.6		8.5		39.3	30.0		9.5		34.0	2.6	
8.8	46	9.3	29.7		9.5		17.0	34.4		9.5	3	25.3	9.6		9.1		53.5	48.6	*b*	9.5		38.4	2.4	
9.4		23.5	6.8		9.5		23.1	53.1	*aB*	9.4		36.0	12.1		9.1	13	19.1	39.8		7.3		48.4	37.5	L
9.2		30.3	2.2	R	9.4		24.3	57.5	~~*aB*~~	9.5	4	0.0	29.1		9.4		26.5	41.4		8.8		55.6	11.4	
9.3		35.2	22.9		9.1		27.5	27.1	R	9.2		2.9	31.9		9.5		28.7	35.3		9.4	22	14.5	12.2	
9.5		39.3	49.5		‡9.5		52.7	53.5		9.3		14.6	35.9		9.5		37.5	0.7		7.9		22.6	11.3	K
9.5		45.3	33.0		8.7		55.7	19.3		9.2		17.4	38.0		9.5		47.7	5.1		9.5		29.8	15.5	
8.6		48.6	10.5	L	9.2		58.0	11.1		9.0		27.1	59.9		9.3	14	4.8	24.1		9.2		52.7	6.7	
9.5		54.5	42.9		9.4	55	1.9	5.1		8.6		39.8	46.8		8.0		7.4	49.1	K	9.2	23	10.9	53.7	
9.5	47	2.4	45.4		9.0		6.9	3.8		9.5		42.5	54.9		9.0		7.4	15.4		9.1		16.2	55.9	*b*
8.3		9.9	2.5	K	9.5		10.0	23.6		9.5	5	3.0	12.3		8.5		15.0	44.2	K	9.1		36.2	7.4	
9.5		12.0	28.4		7.6		33.0	58.0	L	9.5		19.2	50.5		8.2		32.8	37.1	B	8.2		50.0	24.5	K
		+	+				+	+				+	+				+	+				+	+	
10pr.		*26.32*	*0.62*		*10pr.*		*26.36*	*0.74*		*10pr.*		*26.40*	*0.86*		*10pr.*		*26.45*	*1.00*		*10pr.*		*26.52*	*1.13*	

3913 *a*				
9.5	*54*	*46.0*	*57.8*	*a*
3913 *b*				
9.5	*54*	*50.5*	*57.1*	*a*

DB 6.0 1855 BD ed 1903

19ʰ—20ʰ **+18°**

m	19ʰ ′ ″	+18° ′		m	19ʰ ′ ″	+18° ′		m	19ʰ ′ ″	+18° ′		m	19ʰ ′ ″	+18° ′		m	19ʰ—20ʰ ′ ″	+18° ′	
	4101—4160				**4161—4220**				**4221—4280**				**4281—4340**				**4341—4400**		
9.4	23 51.5	31.3		9.5	30 56.0	18.8		9.5	38 32.9	9.8		9.0	46 9.5	27.6		8.3	52 31.1	10.2	
9.5	54.0	3.1		6.7	58.4	39.2	K	9.5	33.4	50.4		8.4	10.8	46.2		9.5	34.1	14.9	
9.1	57.1	52.2		9.2	31 7.0	33.8		9.2	37.3	41.2		8.0	11.1	22.4	L	9.2	53 0.2	53.8	
9.5	24 33.7	2.2		8.6	17.1	29.5		9.0	38.0	49.7	Kb	8.6	25.5	26.4	L	9.5	15.5	16.9	
9.5	41.2	53.7		9.4	23.3	2.0		9.5	49.9	31.2		9.5	49.6	37.4		9.3	36.3	26.6	
9.4	44.5	13.5		8.6	27.1	29.2		9.5	39 9.3	34.5		9.4	53.5	42.3		9.0	40.7	19.1	
9.5	46.1	51.8		9.3	29.8	4.2		9.5	22.2	10.8		9.5	54.5	54.4		8.8	45.3	56.1	K
9.5	25 3.8	4.0		7.0	30.6	16.4	L	9.5	24.5	36.8		9.4	47 0.9	5.2		9.5	51.1	2.4	
9.3	8.0	0.5	B	9.3	42.3	19.0		9.5	25.4	39.7		9.5	9.6	43.8		9.2	55.9	4.5	
9.1	10.1	23.9		9.4	48.4	52.2		9.4	41.3	12.2		neb	18.4	23.0		9.5	54 4.3	4.9	
9.5	12.9	28.3		9.5	52.5	24.9		9.4	43.2	9.9		9.5	32.9	57.6		8.6	5.3	56.2	K
9.4	18.5	58.7		9.3	32 19.9	14.4		8.8	47.6	0.4		9.4	36.7	27.0		9.3	7.5	48.6	
9.5	24.5	20.3		9.3	27.1	7.8		9.4	50.8	3.7		9.2	59.9	43.1		9.5	10.9	36.2	
9.5	40.0	29.3		9.4	28.4	21.3		9.5	40 0.9	28.9		9.3	48 0.2	59.5		9.5	13.1	11.3	
9.5	41.2	25.3		9.2	32.3	21.8		9.3	6.7	43.6		9.1	9.0	17.3	a	9.5	45.3	3.8	
9.5	42.4	7.0		9.2	32.7	34.9		7.7	16.8	27.7	B	9.5	16.1	56.2		9.5	48.2	17.3	
9.5	26 19.8	26.3		9.3	37.6	12.9		8.2	26.5	32.0	B	9.3	17.9	44.6		9.5	56.4	52.6	
9.4	21.2	36.7		9.1	42.8	12.3		8.1	34.3	49.7	P	9.2	20.0	9.7		9.5	55 1.0	34.3	
9.5	49.9	11.4		8.0	48.0	21.5	B	9.5	50.5	58.4		8.8	22.9	18.6		9.0	23.3	54.2	
9.3	52.0	55.4		9.5	55 0	5.0		4.0	55.2	10.5	L	9.3	28.6	46.6		9.1	50.3	10.4	R
9.1	52.9	38.8		9.2	33 7.1	18.3		9.5	41 9.4	29.9		8.9	38.3	55.3		8.5	56 1.9	8.9	L
9.0	27 0.3	5.7	K	7.5	8.1	50.3	K	8.6	11.0	55.8	L	9.2	42.0	39.1		9.1	6.7	59.0	
8.5	7.1	23.8	K	9.5	28.3	22.3		8.3	14.4	36.1		9.4	43.6	41.9		9.5	7.1	32.0	
8.6	13.8	45.8		9.5	41.6	4.4		9.4	18.8	51.4		9.5	46.7	5.1		9.2	19.3	51.4	
8.5	27.4	32.4	R	9.5	57.6	4.4		9.0	25.5	42.2		9.5	49.8	12.7		7.0	45.8	7.4	L
9.5	33.3	40.6		9.3	58.1	34.7	a	9.5	28.0	2.7		9.5	49 3.7	6.8		8.2	50.7	16.8	B
9.5	44.1	27.9		8.9	34 3.7	44.8		9.5	48.1	36.3		9.2	9.7	39.7		9.5	57 19.7	29.6	
9.1	51.7	21.5	K	9.4	6.1	29.3		7.7	42 0.6	17.5	L	9.5	16.6	21.2		9.0	31.1	19.2	K
9.5	56.5	30.2		9.3	22.9	6.9		9.5	1.4	50.5		9.5	16.6	42.7		9.4	32.0	36.0	
9.5	58.3	1.8		9.3	23.4	1.8		9.3	5.4	22.2		9.5	23.9	30.8		8.9	36.6	53.4	
9.5	28 0.9	21.3		9.5	24.1	3.3		9.0	5.9	43.2		9.5	24.5	45.4		9.5	52.1	40.9	
8.3	12.3	58.8	K	9.5	38.3	22.3		7.5	16.8	30.7	L	9.5	36.6	11.9		9.5	55.7	49.0	
9.5	29.9	21.1		9.2	46.0	15.4		8.1	17.1	1.0	K	8.9	38.1	4.8	K	9.5	56.7	44.7	
9.5	34.1	12.2		9.5	46.4	47.0		5.0	32.7	47.2	L	8.9	39.2	41.5		9.1	57.7	54.4	
8.9	36.2	6.2		9.5	57.1	23.3		9.5	35.6	40.8		7.7	50 3.1	48.1	K	8.9	58 12.8	30.6	K
8.9	42.3	23.6	K	8.9	35 0.2	36.4		8.8	49.3	6.2	K	9.5	9.5	27.0		9.1	41.1	29.3	K
7.0	42.7	41.8	K	8.8	2.0	17.3		9.5	51.0	13.2		9.3	10.5	12.0		9.1	47.4	41.6	K
9.4	48.4	24.0		9.4	15.2	26.1		9.0	59.0	29.7	K	9.5	29.6	16.1		9.5	55.1	1.4	
9.4	51.6	53.7		9.5	22.1	9.4		9.2	43 2.3	49.6		9.3	32.0	31.4		8.8	59 8.4	13.4	
9.2	29 3.0	14.7		9.5	22.8	38.2		9.4	3.7	57.0		9.5	33.2	5.7		8.8	9.5	50.9	
9.5	16.8	35.2		9.5	23.4	19.6		9.3	11.9	22.6		9.1	34.5	32.4		8.7	16.5	51.6	
7.9	22.7	15.4	L	9.5	47.0	25.9		9.5	16.3	29.5		9.4	40.4	32.1		9.0	38.7	52.2	K
9.0	25.4	22.6		9.5	47.8	36.6		9.5	42.3	33.9		9.2	40.4	38.9		8.9	43.9	41.9	K
8.8	28.7	14.7		7.0	52.7	8.0	K	9.3	52.1	12.6		9.4	55.1	30.3		9.1	0 26.1	6.9	b
8.9	32.9	49.3	K	9.4	53.5	47.6		9.4	55.8	45.8		9.4	55.6	27.9		9.5	1 3.7	55.7	
9.4	40.4	38.5		8.6	36 8.9	2.7	K	9.3	55.8	11.9		9.1	57.0	58.1		9.3	9.4	14.4	
9.4	41.3	40.5		9.5	27.9	28.6		9.3	57.6	11.8		8.7	51 0.0	22 6		9.0	12.4	53.8	
9.2	47.4	2.5		9.5	54.0	38.3		9.4	44 8.8	0.8		9.3	1.0	56.9		9.3	13.4	34.4	
8.8	57.9	48.7	K	9.1	55.8	18.5		9.4	16.9	23.4		9.1	5.2	10.6		9.3	17.5	43.5	
9.2	58.8	1.9		9.2	37 2.0	46.9	b	9.4	18.5	6.5		9.5	14.5	14.9		9.0	26.9	51.8	
9.5	30 7.0	20.8		9.2	34.9	22.4		9.4	22.9	6:3		9.5	25.7	26.1		9.1	27.9	50.2	
9.5	10.3	50.9		9.5	38.3	6.4		9.5	25.7	26.5		9.5	29.9	30.3		9.5	31.7	34.0	
9.4	18.0	36.2		8.5	40.6	13.6	K	9.5	48.8	21 9		9.0	53.2	51.1		8.2	33.4	26.7	L
9.4	21.6	4.8		9.5	55.9	54.0		9.2	45 4.9	29.7	K	8.6	58.7	2.1		9.5	39.7	34.0	
9.0	29.2	21.4		9.5	56.4	21.0		9.4	24.0	7.2		9.5	59.1	5.7		8.2	51.4	12.3	K
9.0	36.7	42.4	K	7.0	38 3.8	14.5	K	6.6	55.1	17.5	Lb	9.5	52 6.2	26.5		9.4	58.7	52.4	
8.8	37.0	36.3		9.5	13.9	37.0		9.5	46 0.9	54.4		9.4	9.3	19.7		9.5	2 21.1	47.1	
9.1	46.3	44.2	Kb	7.8	16.5	22.9	K	9.5	2.4	31 0		9.3	11.7	24.1	a	8.8	27.4	38.8	R
8.7	49.1	47.3	K	9.5	17.3	32.4		9.5	6.5	13.1		9.4	14.3	24.0	a	9.1	35.4	9.7	R
9.2	50.5	51.7		9.3	31.8	7.5		9.5	8.0	6.6		9.0	23.5	23.6		9.1	37.5	35.8	
	+	+			+	+			+	+			+	+			+	+	
10pr.	*26.58*	*1.25*		*10pr.*	*26.63*	*1.34*		*10pr.*	*26.69*	*1.44*		*10pr.*	*26.75*	*1.53*		*10pr.*	*26.83*	*1.64*	

4401—4460				4461—4520				4521—4580				4581—4640				4641—4700			
	20ᵐ	+18°			20ᵐ	+18°			20ᵐ	+18°			20ᵐ	+18°			20ᵐ	+18°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.4	2 42.0	17.6		9.2	13 34.7	54.3	K	9.4	24 34.5	16.2		9.5	35 9.0	55.4		8.8	45 50.2	11.2	
7.3	45.7	39.9	L	9.5	41.0	3.9		9.5	35.0	6.1		9.5	11.2	0.3		8.8	46 27.2	43.9	
9.5	53.1	0.8		9.5	42.7	13.8		9.5	45.4	36.4		9.5	15.9	41.5		9.5	38.0	58.0	
8.0	3 5.2	21.7	K	8.4	50.7	53.8	K	9.5	25 2.0	14.0		9.5	15.9	3.1		9.3	45.5	34.5	
9.1	7.3	43.3		9.5	58.9	39.0		7.4	34.6	8.4	K	8.3	17.6	59.8	K	9.5	49.4	30.4	
9.4	10.8	35.3		9.2	14 46.5	1.5		9.3	41.9	3.1	K	8.2	47.6	52.6	L	8.4	47 14.3	54.9	Kb
9.0	19.3	10.3	K	9.1	47.3	34.9		9.5	26 5.6	53.2		9.5	48.2	13.2		9.3	43.9	54.5	
9.5	23.6	52.3		9.4	48.0	6.3		9.5	10.8	15.9		9.5	36 0.8	15.6		9.5	54.0	5.9	
9.5	41.2	29.6		9.3	55.0	47.3		9.5	14.2	43.3		9.1	2.6	26.7	K	9.5	48 20.5	1.0	
9.5	47.7	5.5		8.3	59.6	23.5	R	9.5	23.0	37.0		8.6	14.6	40.6	K	8.8	25.9	43.6	K
9.3	55.7	32.0		9.4	15 10.0	47.5		8.7	49.9	9.4	K	8.3	15.1	32.5	K	8.8	52.0	46.6	
9.3	4 23.1	28.8		9.5	12.3	22.2		9.0	53.7	2.2	K	8.8	26.2	55.6		9.2	49 12.6	46.8	
9.2	26.7	35.8		9.4	37.3	39.6		9.4	27 14.9	18.7	K	8.8	26.5	50.1		8.9	12.7	53.7	
9.2	27.0	9.3		8.5	37.7	53.7	K	9.5	29.2	9.4		9.4	41.4	25.0		9.2	17.5	35.0	
9.0	33.3	35.4		9.0	44.9	43.4	K	9.5	28 1.9	39.1		9.0	37 9.6	27.4		9.5	56.4	42.0	
9.4	38.5	5.6		9.5	50.5	38.7		9.3	2.1	1.4		8.8	15.2	43.1	Kb	9.5	50 5.2	39.6	
7.5	45.1	56.6	K	9.5	16 0.0	22.7		9.5	36.3	9.4		9.2	25.6	42.5		9.4	26.2	21.7	
9.3	45.9	3.1		8.3	4.9	29.2	R	9.5	29 12.2	45.7		8.8	28.9	50.4	K	9.4	57.8	45.8	
9.5	57.5	21.9		9.5	27.9	32.4		9.3	12.6	26.3		9.4	30.9	18.0		9.5	59.6	1.5	
8.2	58.1	3.3	K	9.5	39.3	27.8		8.7	14.2	14.6	K	8.3	35.3	5.2		9.5	51 7.9	1.0	
9.1	5 11.9	3.3		9.2	17 3.9	13.7		9.5	31.2	12.5		9.5	45.2	38.0		9.1	22.3	42.5	b
8.2	15.8	55.4	K	9.5	6.7	58.3		9.0	46.4	40.9		8.2	56.0	59.3	K	9.5	40.8	55.1	
9.0	20.8	2.8		9.3	19.3	36.2		9.3	47.6	26.0	K	9.3	38 9.5	4.0		9.5	48.6	30.7	
9.3	41.7	26.0	Kb	9.5	35.0	50.9		9.5	57.8	59.8		9.0	23.2	8.7		9.5	48.9	10.0	
9.4	6 13.6	16.0		8.8	44.6	39.7		9.3	30 7.6	18.4		9.4	28.8	53.8		9.5	52.1	24.0	
9.5	35.1	19.2		8.7	50.0	1.3	K	9.5	8.7	31.5		9.5	39 1.9	18.4		9.5	52 33.6	50.6	
9.5	50.0	11.0	R	9.1	50.3	15.2	b	9.4	17.9	43.5		8.5	4.2	2.5	K	9.2	35.9	53.9	
9.5	52.4	48.8		8.2	18 11.3	50.8	K	9.3	31.1	19.7	K	9.1	5.1	36.3	K	7.2	53 19.1	3.9	L
9.5	7 12.3	58.0		8.4	19.3	30.4	K	9.4	43.9	50.1		9.3	14.5	1.1	K	9.0	23.1	48.4	
9.4	23.2	37.8		9.3	21.9	51.1		9.5	46.8	36.0	R	9.0	38.0	57.0		9.3	32.7	57.7	
8.2	29.4	10.2	R	9.4	33.8	49.9		9.5	52.5	9.0		8.8	40 1.6	43.9		9.4	39.2	58.6	
9.5	39.2	48.8		9.3	36.8	53.4		9.3	59.5	3.9	R	8.3	2.1	15.0		9.3	40.5	52.0	
9.0	8 7.7	43.3		9.0	19 2.9	43.5		9.5	31 1.2	10.1		8.9	9.9	27.0		8.7	42.3	2.9	K
9.4	21.1	43.3		9.0	8.5	59.1	K	8.2	7.9	34.0	K	9.1	13.0	55.5		9.3	48.1	46.7	
9.4	29.4	57.8		9.5	44.6	26.2		9.3	12.0	6.2		9.5	15.6	12.0		5.9	50.9	46.7	L
8.7	46.7	1.4	K	9.5	54.0	59.2		8.5	15.2	37.7	K	8.9	17.3	5.4		9.5	54 18.1	16.0	
8.0	51.4	2.4	K	9.5	20 13.7	56.2		9.3	19.0	19.8		9.2	25.6	39.7		9.3	21.8	36.3	K
9.5	52.8	6.6		9.4	22.9	43.0		8.7	25.9	57.2	K	9.0	29.2	43.2		9.5	42.1	29.5	
9.1	9 29.6	38.2	Kb	8.2	33.6	39.1	K	9.0	38.9	19.1	K	8.9	30.6	45.6		9.5	55 0.2	56.2	
9.4	29.7	23.7		8.3	40.3	21.3	R	9.5	46.9	5.0		9.5	48.3	21.8		8.5	15.6	27.1	K
9.4	10 28.3	0.3		8.4	54.1	29.4	K	9.5	51.9	39.5		* 9.3	41 53.9	21.5		9.5	33.3	57.6	
9.1	28.5	16.2	a	8.9	21 2.6	32.6	K	9.1	54.2	22.2	K	9.5	42 24.5	45.3		9.5	37.0	3.5	
9.0	32.1	15.5		9.4	13.5	28.2		8.8	32 2.0	32.5	K	9.5	26.9	20.8		9.0	56 3.6	48.5	
8.8	42.2	57.5	K	9.5	13.5	4.0		9.5	16.5	56.4		9.5	43 11.6	29.5		9.4	12.1	7.6	
9.4	45.1	8.2		7.5	41.6	19.2	K	9.5	17.9	39.4		9.5	14.9	19.6		9.5	38.0	59.6	
8.5	11 5.1	57.7	K	9.3	46.3	29.9		9.5	28.5	57.5		9.5	23.2	1.5		9.0	57 5.6	23.3	
8.0	15.3	49.5	B	8.8	47.1	57.4	K	9.5	52.6	39.4		9.4	42.6	32.6		8.0	16.6	10.2	L
9.1	15.8	59.4		9.2	58.2	2.3		9.5	53.8	54.5	a	9.4	43.1	35.4		9.5	18.6	34.4	
9.5	19.8	4.5		9.5	22 12.9	11.3		8.8	55.6	27.1	K	9.2	51.9	40.2	K	9.5	20.9	37.8	
9.3	39.3	53.8		9.5	19.1	53.7		9.2	55.6	36.7	K	9.0	44 2.5	49.2	Kb	9.4	26.1	45.4	
9.4	45.2	54.3		9.5	22.3	30.3		9.2	57.9	44.9		9.5	14.6	6.4		9.1	42.6	22.6	
9.4	47.9	48.7		9.3	28.6	46.1		9.5	33 20.0	42.1		9.5	16.9	36.3		9.4	58 0.3	34.3	
9.1	12 3.3	6.4		9.3	23 5.6	21.0		8.8	22.2	53.7		9.5	33.7	49.7		9.5	10.6	59.2	
7.7	48.4	23.1	K	8.8	6.9	51.2		9.5	34 21.9	51.7		9.5	43.2	4.9		9.5	18.3	57.8	
9.5	56.4	9.6		7.6	36.0	56.7	K	9.5	22.4	42.5		9.5	45 1.9	57.8		7.3	26.5	4.9	K
9.2	13 1.2	50.2	K	9.2	41.3	25.0	R	9.1	24.9	38.5		9.0	3.6	9.8		9.5	35.6	22.5	
9.3	19.8	2.6	R	7.0	42.6	56.5	K	9.5	31.9	41.6		9.5	5.2	21.9		9.5	59 19.2	1.2	
9.5	24.2	8.3		9.2	44.6	50.1		9.5	39.2	48.9		9.2	10.6	5.2		9.5	24.1	14.6	
8.8	25.3	57.1	K	8.7	24 1.7	3.8	K	9.4	59.9	11.8		9.0	22.6	9.2		9.5	24.6	42.0	
9.0	30.1	21.3	K	9.5	33.5	10.8		9.5	35 2.1	35.6		9.5	39.7	59.8		9.1	42.6	10.5	K
	+	+			+	+			+	+			+	+			+	+	
10pr.	26.92	1.77		10pr.	27.04	1.90		10pr.	27.18	2.04		10pr.	27.29	2.15		10pr.	27.47	2.30	

4620a
var | 41 11 | 48.3 |

4701—4760

	20ᵐ—21ᵐ	+18°	
m	′ ″	′	
9.5	59 50.1	59.6	
8.3	50.6	32.3	K
9.2	0 6.1	16.3	
9.5	10.4	14.8	B
9.2	34.6	15.3	K
9.5	51.1	43.3	
9.5	52.6	37.4	
9.0	1 12.7	55.9	
9.5	13.6	58.2	
8.6	15.1	15.3	k
9.4	21.1	51.6	
9.5	23.6	36.7	
9.4	25.6	31.9	
9.5	2 26.8	30.8	B
9.1	28.1	14.8	B
9.5	45.2	58.9	
9.2	50.6	27.7	K
9.5	3 1.3	41.0	
6.6	7.1	38.4	K
9.2	10.4	10.3	B
9.4	31.9	28.3	
9.5	32.8	18.8	B
9.0	37.6	47.8	K
9.5	39.2	21.6	B
9.2	51.1	45.0	K
9.3	57.6	1.1	B
9.5	4 0.6	40.5	
9.3	5 4.6	18.8	
7.5	5.1	47.4	K
9.2	31.6	27.4	R
9.3	41.1	44.0	
9.5	43.6	20.5	
9.5	45.4	9.9	
9.5	53.1	41.9	
9.3	6 29.1	42.3	
9.5	42.6	11.8	
9.4	59.1	34.3	B
9.5	7 6.6	42.0	
9.0	27.6	18.1	
9.0	36.6	45.4	
9.5	48.6	29.1	Kb
9.5	57.1	16.0	
7.5	8 29.6	1.0	K
8.5	49.1	41.9	K
8.8	54.9	29.4	K
9.4	9 20.1	21.2	
9.5	56.6	24.0	
9.0	10 4.6	44.9	Kb
9.5	9.7	50.9	
9.3	22.6	44.9	
8.3	23.1	20.9	K
9.3	33.5	0.0	
8.5	43.6	33.0	K
9.5	11 17.9	7.9	
9.5	53.0	0.0	
8.8	12 8.1	24.4	
9.5	48.8	58.8	
9.4	13 7.1	21.5	
9.5	18.6	9.5	
9.5	23.5	12.8	
	+	+	
10pr.	27.63	2.42	

4761—4820

	21ᵐ	+18°	
m	′ ″	′	
8.2	13 39.8	36.4	Kb
8.3	14 4.1	11.5	K
9.2	50.6	46.6	K
9.5	15 2.0	54.1	
9.5	8.7	2.4	
9.5	43.2	14.3	
9.5	45.6	52.0	
9.5	57.0	7.8	
9.1	16 3.3	29.4	K
9.2	7.4	0.2	K
9.5	7.5	45.3	
8.7	8.2	28.7	K
9.5	15.2	21.5	
9.5	22.6	46.8	
9.4	44.5	11.8	
9.2	49.5	50.1	
9.4	56.2	54.1	
9.5	17 17.8	13.7	B
9.4	22.4	17.4	B
9.3	30.6	18.0	
9.5	31.2	41.5	
9.5	38.5	4.2	
9.2	42.5	48.5	Kb
9.5	46.7	54.5	
9.4	18 5.9	59.2	K
9.5	19.2	25.9	
9.3	19.6	12.0	
8.7	39.7	3.0	K
9.4	55.9	43.4	B
9.5	19 6.6	5.7	
9.5	36.2	31.2	
9.5	37.2	36.5	
9.5	39.8	15.9	
6.7	42.3	45.6	K
9.4	57.0	58.3	
8.9	20 32.7	17.0	K
9.4	21 11.5	8.1	
9.1	12.7	32.5	Bb
8.7	27.0	9.2	R
9.2	22 20.7	11.4	K
9.5	23.7	29.9	
9.5	33.1	7.6	
9.5	36.5	26.4	
9.2	59.7	56.0	
9.5	23 17.7	35.0	
9.5	33.9	59.9	
9.4	39.0	12.2	
9.2	48.6	51.6	b
9.5	49.2	15.0	
8.5	25 2.7	29.1	K
9.5	35.2	48.8	
9.5	26 41.2	17.0	
9.5	47.9	59.0	
9.5	27 0.2	28.8	
9.5	10.6	8.8	
8.3	35.5	40.0	B
9.5	51.7	49.9	
8.0	28 7.7	17.4	K
9.5	27.7	44.2	B
8.0	43.2	19.2	K
	+	+	
10pr.	27.83	2.55	

4821—4880

	21ᵐ	+18°	
m	′ ″	′	
9.0	28 56.2	28.8	K
9.4	29 20.1	0.7	
8.9	24.7	22.2	K
9.2	30 23.1	54.6	
9.3	49.6	42.6	K
9.4	56.2	59.3	
5.8	58.9	40.6	Kb
9.2	31 9.2	14.8	
9.5	30.6	5.6	
8.0	53.7	20.1	K
9.5	32 19.0	55.3	B
9.5	37.7	42 3	
8.5	33 5.7	34.6	K
9.0	34 3.5	8.5	
8.2	4.7	36.1	K
9.3	27.7	13.2	
8.7	36.6	3.2	K
9.2	47.2	14.2	K
9.5	57.7	26.1	
9.5	35 7.0	35.4	B
7.7	12.7	18.4	K
9.3	30.4	36.7	
9.5	30.7	11.8	
9.0	46.9	21.1	K
7.0	36 43.8	58.1	K
9.3	50.6	57.4	
9.2	59.2	40.6	K
8.5	37 12.2	42.3	K
9.5	22.6	12.0	B
8.7	26.7	37.5	K
9.3	42.2	47.9	K
9.5	38 19.2	32.0	
9.3	31.6	49.6	K
8.9	45.0	10.8	K
9.5	50.2	27.4	
9.5	39 38.7	15.3	
9.5	55.1	25.0	
7.7	55.5	48.6	L
9.0	40 19.2	37.4	R
9.2	20.3	3.2	
8.9	32.9	25.7	Kb
9.5	56.2	48.9	
9.0	41 12.2	39.9	K
9.0	33.2	44.0	K
9.1	38.6	1.2	R
9.3	53.7	13.6	B
8.7	55.6	6.2	L
9.5	42 35.0	11.8	
8.8	43 0.1	57.2	K
9.5	13.0	11.2	a
7.5	19.7	45.7	K
9.2	23.6	45.7	K
9.4	44 9.7	34.6	
7.2	51.4	38.5	K
9.5	45 33.2	39.5	
9.5	46 6.2	48.5	
9.4	18.6	4.9	
7.7	47.5	30.5	K
5.8	47.7	59.5	K
9.5	56.4	13.9	B
	+	+	
10pr.	28.11	2.72	

4881—4940

	21ᵐ—22ᵐ	+18°	
m	′ ″	′	
9.0	47 22.7	53.4	
9.5	48.4	41.7	R
9.3	50.1	52.5	B
9.0	52.0	53.7	K
9.5	48 7.6	45.7	R
9.5	11.4	27.4	
9.5	13.3	2.3	
9.3	25.0	1.0	
9.0	28.4	58.4	K
9.2	35.5	56.2	B
9.4	49 35.5	3.3	Bb
9.0	41.1	59.2	B
*9.2	50 40.5	47.9	K
9.5	51 2.2	11.8	
9.5	3.0	2.8	
9.3	9.5	24.3	K
9.5	32.8	29.4	B
9.5	45.6	29.7	B
6.8	52 7.5	20.5	K
9.4	14.2	8.3	
9.5	37.0	30.6	
9.2	41.5	37.8	K
9.5	55.4	55.1	
9.5	53 10.2	35.7	
9.3	16.0	13.2	
9.5	54 0.0	53.8	
8.8	5.0	35.0	K
8.8	11.6	51.4	R
9.3	23.1	8.5	K
9.3	38.0	40.2	
9.5	55 2.5	32.7	
9.2	27.0	40.2	K
8.2	28.0	7.8	K
9.3	44 9	12.2	B
9.5	49.9	57.2	
9.5	56 13.0	49.6	
7.5	17.5	11.1	K
9.3	25.4	52.7	
9.4	34.2	44.0	
9.5	56.0	35.0	
9.5	57 5.2	15.0	
9.5	23.0	48.9	a
9.2	58 18.0	49.5	K
9.0	20.3	42.7	Kb
9.5	34.1	3.8	
9.4	47.0	53.9	
9.5	59.7	44.7	
9 5	59 26.7	15.6	
9.5	47.5	4.4	
6.1	e 34.8	46.5	L
9.5	42.9	19.3	
9.4	1 1.6	0.1	
9.5	5.3	43.7	
9.5	5.9	37.9	
9.5	20.1	26.6	
9.5	22.3	39.3	
9.2	33.0	47.8	K
9.3	34.5	15.6	
9.1	2 13.7	17.9	K
9.5	20.8	37.9	
	+	+	
10pr.	28.39	2.85	

4941—5000

	22ᵐ	+18°	
m	′ ″	′	
9.5	2 36.5	3.1	
9.4	45.3	56.0	
9.1	3 0.6	4.6	
9.3	4.5	11.9	
9.3	23.4	52.3	
7.0	25.2	54.7	K
7.9	27.9	5.0	B
9.0	32.1	43.1	
8.2	36.4	54.1	K
9.4	36.9	14.1	
9.5	4 24.3	14.1	
9.5	31.3	15.9	
9.4	49.0	49.2	
9.5	5 7.8	19.4	
9.4	29.9	45.0	
9.5	39.4	0.8	
9.4	41.4	3.2	
9.5	53.2	42.9	
8.2	6 43.3	11.5	K
9.4	44.7	21.1	
9.3	8 0.5	8.5	
9.3	41.8	29.8	
9.5	51.7	3.4	
9.0	9 2.3	47.8	
9.2	9.3	11.7	
9.1	10 10.2	6.5	K
9.5	27.5	21.6	
9.5	36.4	4.3	
9.5	44.1	6.6	
7.9	11 3.2	19.6	L
8.2	49.6	33.9	L
9.2	12 18.4	51.9	
9.3	29.8	14.9	
8.9	33.1	56.1	
9.5	13 11.2	11.1	
9.0	48.3	49.2	K
9.2	14 6.8	5.8	a
9.1	18.7	5.5	K
9.2	15 5.4	4.7	K
8.6	57.3	19.7	L
9.4	16 2.5	51.6	
8.6	43.1	28.3	K
9.5	17 25.4	10.4	R
9.0	45.6	29.7	K
8.5	48.0	7.8	L
9.5	18 46.0	47.5	
9.3	19 3.2	5.6	
9.5	30.0	40.8	
9.5	57.0	30.1	
9.4	20 43.6	38.8	Kb
9.2	46.6	29.8	
9.2	49.1	22.4	K
9.5	53.7	8.3	
8.9	21 11.6	42.6	K
9.1	18.5	36.9	K
9.4	22 29.1	20.4	K
9.5	39.4	4.9	
9.5	23 5.4	1.3	
9.5	7.3	29.0	
9.3	25 18.0	7.9	Bb
	+	+	
10pr.	28.68	2.97	

4892a

9.7	50	13.6	8.8	B

5001—5054					5055—5108					5109—5162					5163—5216					5217—5270				
	22ᵃ		+18°			22ᵃ		+18°			23ᵃ		+18°			23ᵃ		+18°			23ᵃ		+18°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9.5	25	22.5	5.5		9.5	42	37.4	58.8	R	8.9	0	51.5	10.2	Kb	9.2	24	54.6	53.2	Rb	9.5	40	21.3	3.4	
7.8		28.0	52.7	K	9.4		44.1	59.4	R	9.5	1	0.0	0.3		9.2	25	13.3	2.3	K	9.5		48.4	35.6	
9.5	26	5.0	43.5		9.3		45.1	37.8	B	9.3		12.5	1.0		9.3		15.6	36.0		9.1		50.8	29.0	
9.5		39.5	46.4		8.4	43	1.4	0.0		8.5		39.5	43.9	K	9.5		26.7	17.2		9.4	41	12.6	20.1	
8.9		57.9	55.8	Rb	6.7		34.9	22.1	Kb	9.5		53.6	11.9		9.5	26	5.6	11.0		9.4		19.7	13.0	
9.5	27	24.8	14.5		8.9	45	5.9	43.4	K	9.5	2	13.5	15.7		9.5		30.5	56.9		8.5		38.7	34.1	
9.5		43.0	2.0		9.5		35.9	17.2		9.0		30.6	49.0	K	9.4		33.4	27.5		8.7		45 3	27.5	Kb
9.5	28	31.2	4.0		9.2		46.4	0.6	b	9.5		59.6	12.5		9.2	27	2.4	53.3	K	9.5		58.7	2.6	
6.8		48.5	57.6	K	9.4	46	42.9	31.2		9.1	3	33.1	31.3	K	9.4		10.0	55.6	K	8.8	42	44.8	43.8	R
9.4	29	19.5	4.0		8.0		54.9	56.5	R	8.3		34.9	7.3	Kb	9.4		22.9	26.2		8.6		48.3	52.2	R
9.3		24.2	7.1		8.1		58.4	49.5	K	9.5		57.6	3.6		9.5	28	13.7	3.3		9.5	43	36.9	35.2	
9.4		45.6	51.3	K	9.5	47	48.5	17.1		9.5	4	9.1	11.2		9.5		55.2	11.0		9.5		57.8	50.4	
9.0	30	16.6	23.8	K	7.3		55.5	46.6	K	9.5	5	8.5	11.5		9.5	29	5.0	56.4	R	9.5	44	13.0	47.5	
6.0	31	53.0	48.1	Kb	9.1	48	29.5	20.0		9.4		10.6	21.9		8.5		28.2	23.6	K	9.3		27.8	42.1	
9.0		53.6	4.7	K	8.1		32.1	6.1	K	9.5		55.8	27.7		8.8		49.5	14.7	K	5.0	45	7.4	19.0	L
9.3		56.8	51.0		9.2	49	0.8	34.0		9.3	6	43.8	28.1	K	9.2		55.0	33.1	B	8.3		40.4	44.8	K
9.2	32	21.0	20.5		9.2		39.5	45.0		6.5		48.8	50.4	K	9.5	30	6.3	6.0		9.5		54.4	46.2	
9.3		25.8	15.0		9.4		49.7	9.9		7.3	7	4.8	58.8	K	8.8		9.7	58.5	Rb	9.5	46	25.9	47.9	
9.5		35.9	1.5		9.1		59.0	39.8		9.3		24.5	8.6	B	9.4		38.7	40.5	R	9.5	47	18.3	36.9	
9.5		44.3	32.5		9.0	50	14.4	34.5	K	8.2		25.9	28.6	K	9.0		42.0	50.9	R	9.5		19.5	14.2	
6.5		46.7	56.1	Kb	9.0		25.0	32.5	K	9.0	8	44.6	42.2		9.5	31	46.1	42.3		9.2		26.8	25.1	Kb
9.5		47.3	59.2		8.5		29.5	14.1	K	9.4	9	12.9	42.4		8.9	32	46.7	59.5	K	9.5		52.4	41.6	
8.5	33	21.9	43.0		9.2		30.2	9.6	K	9.5	10	2.0	2.8		9.1		48.2	49.5		9.1	48	6.6	57.4	
9.2		22.9	35.0		8.6		58.0	48.0	K	9.5		9.8	24.4		9.5		54.1	17.2		8 8		15.1	49.1	
9.0		43.6	56.2		9.3		59.2	4.3	a	9.0		42.1	13.6	K	8.9		56.4	54.4	K	9.4		46.8	15.0	
8.8		44.9	41.8		9.5	51	55.2	55.9		9.2	11	6.8	55.5	K	8.7		57.4	58.3	K	9.5	49	31.0	55.5	
9.2		51.6	34.0		8.5	52	3.5	33.9		8.0		11.8	12.0	K	9.3	33	28.7	59.3	R	9.3		55.0	27.7	
9.0		54.6	28.0		8.2		4.0	22.5	L	9.5		51.8	56.7		9.0		58.6	22.4	K	9.5		57.0	58.2	
9.5	34	30.2	4.0		9.0		7.2	4.2		9.1		52.6	23.4		9.5	34	10.2	44.0		8.7	50	53.8	29.7	K
9.3	35	26.1	5.9	K	9.0		25.5	3.5		9.5	12	26.3	46.6		9.5		30.0	50.5		7.4		54.7	53.5	R
8.2		33.9	1.4	K	9.0	53	22.0	37.1		7.9		50.8	31.0	K	9.3		40.6	4.5		9.1	51	21.7	49.4	
9.5		30.9	28.4		9.4		26.1	8.8		9.0	13	21.4	44.6	K	9.2		51.9	6.1		9.5		51.0	20.9	
9.0		41.2	8.9	K	9.1		41.5	12.3		8.2	14	59.8	37.9	K	9.5		52.2	38.1		9.5		53.7	49.5	
9.5		43.9	13.8		9.3	54	14.5	37.0		9.3	15	39.1	9.5		9.5	35	4.2	17.0		9.4	52	0.2	1.8	
9.3		54.9	48.5		8.0		23.4	30.1	Kb	9.2	16	15.3	44.2	K	9.5		19.7	7.5		9.4		5.5	44.1	
9.3	36	7.9	27.3		8.3		38.2	49.0	K	9.1		16.1	45.2	a	9.4		21.2	45.7		8.7		17.4	13.3	Kb
9.5		21.6	21.4		9.1		39.8	43.2	K	8.8		26.9	39.1	K	9.5		42.1	50.0		9.5	53	9.5	11.9	
9.4	37	3.5	18.5		9.5		53.4	48.4	K	9.5		37.2	12.3		8.5	36	14.7	18.7	K	8.9		24.1	47.4	
9.4		3.5	16.4		8.5		54.7	2.1		8.0	17	4.8	11.2	K	9.0		16.0	52.8	R	9.5		33.0	26.1	
9.0		5.9	54.7		8.1	55	12.2	54.4	K	9.5		5.6	22.0		9.5		38.7	57.9		8.2		50.9	56.0	R
9.4		31.2	21.4		8.8		31.2	55.1	K	8.8	19	8.3	46.7	K	9.5	37	23.6	31.1	K	9.5	54	38.0	53.5	
8.9		56.8	55.9	R	8.3		32.7	3 7		9.2		31.3	29.9		9.5		54.1	3.5		9.4		40.1	7.1	
9.3	38	7.4	53.3	aR	8.3		49.2	2.7		9.4		45.1	39.2	R	9.3		56.6	5.2		8.6	55	10.3	2.6	
9.5		12.4	59.2		9.0	56	46.5	15.1	K	9.5		51.5	3.5		9.5	38	23.6	59.8		9.5		18.3	1.6	
9.0		26.4	5.5		8.9	57	3.6	11.3	K	8.3		58.4	25.0	L	9.5		36.7	31.6		9.4		30.5	11.8	
6.2		26.4	36.1	K	9.2		28.4	13.1		9.4	20	5.8	58.5	a	9.2		38.4	53.3	K	9.5		54.6	49.6	
9.0		30.9	30.5	L	8.7		42.6	58.8		9.5		14.9	29.5		8.5		39.4	44.8	K	9.5		56.9	6.0	
8.0		54.4	29.2	K	9.3	58	1.3	30.5		9.3		46.7	2.0		9.5	39	2.2	41.3		7.9	56	5.1	34.5	K
9.3	39	26.5	58.5	R	9.3		17.5	19.4		9.5		56.2	5.2		9.5		4.2	4.1		9.5		8.3	46.6	
9.1		44.9	16.0	R	9.0		21.0	25.5		9.1	21	44.7	19.4	Kb	9.5		13.7	11.4		9.5		15.5	4.2	
9.5	40	27.6	33.6	R	7.4	59	3.3	12.5	K	9.5	22	10.7	28.1		9.5		26.1	13.8		9.2		55.5	23.0	b
9.5	41	2.7	58.7		8.7		12.6	28.1	K	9.5		31.2	32.3		9.5		28.1	26.6		9.5	58	20.3	56.8	
9.3		6.9	53.6		9.5		37.0	6.2		9.3	23	29.4	57.9		9.4		35.8	39.7	K	9.4	59	41.5	56.6	
8.2		46.6	6.6	L	9.3		58.6	52.1		9.5	24	52.2	18.0		9.3	40	8.3	52.2	K	9.3		55.0	56.7	
		+	+				+	+				+	+				+	+				+	+	
10pr.		29.08	3.11		10pr.		29.41	3.20		10pr.		29.78	3.26		10pr.		30.20	3.32		10pr.		30.52	3.34	

Zone +19°

1—40				41—80				81—120				121—160				161—200			
	0ᵘ	+19°			0ᵘ	+19°			0ᵘ	+19°			0ᵘ	+19°			0ᵘ—1ᵘ	+19°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.5	0 1.1	1.6		9.2	11 26.8	27.5		9.4	25 50.8	47.5	R	8.5	38 58.2	24.2		9.5	51 45.0	31.6	
9.0	1.9	41.0		9.5	44.0	58.0		9.3	58.4	15.0		9.0	39 25.4	36.5		8.5	52 1.3	51.6	
9.3	13.9	14.4		7.7	53.7	11.1	Kb	7.5	26 3.9	38.8	K	9.5	33.0	36.7		9.5	22.4	43.1	
9.5	32.9	45.5		9.3	12 6.2	57.8		9.5	48.5	0.7		9.5	57.7	37.8		9.5	32.0	21.7	
9.3	38.4	40.7		9.0	20.4	49.9		9.4	52.9	38.4		9.0	59.7	12.1		9.4	33.7	29.5	
9.5	49.0	4.6		9.5	57.4	48.9		9.0	27 12.6	57.5	K	9.5	40 7.8	18.9		9.0	43.1	37.6	
8.5	1 4.4	27.9		9.3	59.1	38.2		9.3	19.9	51.0		9.5	38.6	27.6		8.5	51.2	29.8	K
9.5	29.9	39.3		9.3	13 34.9	47.1		9.2	28.2	36.8	B	9.5	42.8	34.5		9.5	53 18.7	29.5	
9.5	37.1	17.1		9.0	14 17.8	59.1		9.4	57.8	28.0		8.0	41 8.8	25.5	K	9.5	41.7	28.0	
6.7	37.8	6.5	K	9.3	31.4	52.9		9.1	29 15.3	2.2	Kb	9.3	29.1	47.0		9.5	42.3	2.6	
9.3	38.1	12.5		9.5	15 27.0	2.1		9.5	17.4	44.4		9.5	33.4	16.5		9.0	54 9.5	3.5	K
8.6	2 5.1	4.5	K	8.5	27.9	58.9	R	9.5	38.1	1.5		9.4	42 2.8	5.4		9.5	33.7	35.2	
9.1	16.9	29.9	b	7.8	40.9	16.8	K	9.1	30 10.2	12.9	b	9.2	3.0	56.6		9.5	48.4	55.0	
9.5	3 30.2	6.5		9.5	16 17.0	53.6		9.1	16.2	58.7		9.5	4.4	36.0		8.8	55 22.9	48.0	K
9.3	4 20.7	4.1		9.5	39.6	23.2	B	9.5	31.4	14.0		9.0	48.6	7.1	K	9.3	24.8	41.3	
9.5	33.4	38.5		9.4	17 3.1	8.1		9.0	31 25.0	59.1		9.2	52.5	58.6	b	9.5	56 3.7	19.3	
9.5	53.0	52.0		8.0	13.4	15.8	K	9.5	52.8	12.7	B	9.0	43 30.2	38.3	R	8.8	11.2	59.0	
8.0	58.6	25.4	K	9.5	18.2	55.5		8.8	32 1.1	34.1		9.5	44 39.1	35.2		9.5	18.9	11.5	
8.6	5 37.0	23.7	K	9.0	38.9	24.7		9.5	36.4	43.3		9.0	45 8.4	16.8	K	9.3	57 59.6	17.4	
9.5	38.2	34.4		9.5	49.4	17.2		9.3	50.0	40.4	*a*	8.1	46 28.4	17.3	K	6.5	59 22.7	22.3	K
8.9	44.1	56.0	K	8.3	49.7	47.9	K	9.4	33 10.9	39.3		9.5	47.3	12.9		9.5	49.5	25.6	
9.5	52.2	7.3		8.5	50.3	5.4	K	9.0	21.0	38.5		8.8	47 33.4	30.4	K	8.5	51.7	47.7	K
9.5	6 5.6	11.0		9.2	18 12.9	31.0		9.5	35.9	39.8		9.5	34.4	41.8		9.5	0 1.8	55.0	B
9.0	22.3	51.7		6.5	31.0	21.6	K	9.5	34 1.0	49.0		9.5	36.5	22.0		9.4	2.1	53.0	B
9.5	36.5	1.0		9 0	55.4	14.7		7.7	2.5	20.3	Kb	9.0	43.6	3.8	K	5.7	10.7	57.9	K
9.2	38.9	39.6		8.8	19 3.4	29.8		8.8	17.9	38.6		9.0	48 5.4	13.4	Kb	9.5	38.5	6.1	
5.0	7 6.8	24.6	Kb	9.4	4.9	37.5		9.5	19.2	46.9		9.5	12.8	1.5		9.5	1 19.4	32.2	
9.3	15.0	7.5		9.5	14.3	7.6		9.0	22.4	23.7	K	9.0	52.9	11.3	B	9.3	57.4	14.8	*a*
9.1	44.9	15.8		9.5	34.1	59.4		9.0	51.9	16.5		9.5	49 1.4	49.5		9.0	2 10.6	15.8	B
9.5	47.4	29.8		9.2	36.9	34.4		9.4	58.0	28.5		9.5	4.9	56.1		8.8	11.3	30.6	
9.5	8 16.5	11.1		9.5	20 22.0	17.1		8.8	35 15.2	58.7		8.9	18.7	37.6		8.4	18.4	3.4	Kb
9.1	19.9	50.2	b	9.3	23.9	35.5		9.3	28.4	1.1		8.5	28.4	5.5	B	9.5	21.5	15.0	
9.5	25.7	22.3		7.2	37.0	59.6	K	9.5	59.0	14.8		8.8	34.5	37.6	K	9.5	3 9.1	11.3	
9.4	29.5	55.2		9.1	21 17.9	48.7		9.5	36 21.1	44.2		9.5	40.1	41.1		9.5	9.7	25.1	
9.5	9 17.9	47.7		9.3	22 8.4	29.9	b	9.5	53.7	19.9		9.0	50 7.4	18.3		8.7	38.4	7.5	K
9.5	10 11.4	33.5		9.4	15.7	28.0	*B*	9.4	55.4	7.8		9.5	18.1	18.2		9.5	41.4	18.2	
9.1	12.1	9.7		9.5	21.4	29.2		8.5	37 3.0	38.3		9.5	53.0	55.7		9.5	41.4	26.5	
6.8	21.9	26.1	K	9.2	24 13.6	7.3		9.2	20.5	13.7	Kb	8.6	51 8.8	47.7		9.0	4 13.1	11.0	
9.5	43.0	3.5		5.5	59.4	30.1	Kb	9.5	37.3	0.9		9.5	20.4	42.3		9.5	19.2	30.4	
9.2	44.9	46.1	b	9.5	25 12.9	50.8		9.5	38 48 1	57.2		9.5	28.7	12.6		9.0	5 1.6	44.5	
10pr.	*30.84*	*3.34*		*10pr.*	*31.09*	*3.33*		*10pr.*	*31.40*	*3.30*		*10pr.*	*31.68*	*3.27*		*10pr.*	*31.94*	*3.23*	

201—260					261—320					321—380					381—440					441—500				
	1°		+19°			1°		+19°			1°—2°		+19°			2°		+19°			2°—3°		+19°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.5	5	27.3	23.1		9.5	26	21.7	21.7		9.5	55	4.5	52.3		9.5	27	42.2	36.3		9.0	51	12.3	29.0	
9.0	6	13.0	28.3		9.5		41.6	11.3		8.8	56	8.5	12.3	K	9.5		49.8	29.7		9.4		26.3	37.2	
9.3		17.1	55.3		8.0		57.2	25.5	K	9.4		49.7	6.8		9.4		51.3	16.8		9.5		53.9	55.1	
8.9		17.8	48.7		9.5	27	49.0	11.4		7.7	58	14.6	54.4	K	9.4	28	1.2	3.8		9.5	52	30.8	31.1	
9.1		38.4	26.1		9.4		49.6	2.4	B	9.0		16.4	34.5		9.4		11.7	45.0	B	9.5		49.3	14.3	
9.5		39.5	47.0		9.5		59.3	4.6	B	9.4		21.9	51.2		9.4		12.8	50.2	B	9.2	53	8.8	36.3	Kb
9.0		58.3	28.3		9.1	28	37.1	39.4	b	9.3	59	19.7	53.0		9.1		52.5	44.6		9.5	54	8.3	21.7	
9.4	7	10.9	23.4		9.3	29	1.7	27.2		9.5	1	5.1	42.3		9.4	29	15.9	39.3		9.5		23.3	30.3	
9.3		15.7	39.0		8.5		13.0	57.4	K	7.5		40.4	39.0	K	7.6		23.6	56.9	L	8.3		53.8	46.3	
9.3		26.0	3.1		9.2		27.8	11.4	b	9.5	3	0.4	9.1		9.2		29.8	51.2		8.8		54.3	14.8	
9.5		38.3	54.6	B	9.3	31	14.1	43.0		9.5		5.0	37.3		8.5		46.2	25.6		8.8	55	33.2	31.7	B
6.8		41.4	39.0	K	9.5		15.3	26.1		8.0	4	50.6	7.4	K	8.5	30	11.5	37.7		9.5	56	14.8	52.7	
7.1	8	4.8	44.9	Kb	9.5		44.5	24.0		9.1	5	3.7	4.2		9.3		16.8	37.4	a	9.5	57	35.8	17.9	
9.5		30.7	11.4		9.5	32	23.0	16.4		8.5		16.6	54.1	K	7.5		29.0	6.1	K	9.5		37.3	25.5	
9.0	9	11.4	59.2		9.5		37.3	24.0		9.4	6	25.1	46.9		9.4		38.2	51.7		9.5	58	27.8	24.9	
9.5		29.6	18.3		9.0	33	42.1	59.3		9.5	7	14.1	36.0		9.5		59.2	58.1		9.5		45.7	20.6	
9.3	11	19.7	39.7		8.2		44.8	6.1	K	9.2	8	12.2	1.5	K	9.1	32	26.5	16.6		9.5		45.8	2.2	
9.5	12	13.8	15.5		9.0	34	25.3	43.7	K	9.3	9	1.1	34.6		8.6		32.3	33.4		9.3		48.0	54.5	
9.5		28.4	29.0		5.3		38.4	34.0	Kb	9.0		7.5	23.1	K	8.8		35.9	22.5		9.5		52.8	0.1	
9.2	13	5.5	50.8	b	9.3	35	40.2	33.5		6.0	10	4.6	13.8	L	8.8		52.9	22.7		9.4	59	3.7	15.2	
9.4		57.2	51.5		8.5	36	58.6	7.3	L	9.5		52.4	51.1		9.1	33	46.9	40.4		9.5		25.8	23.2	
9.4	14	25.4	35.4		6.7	37	2.3	21.1	Kb	7.5	11	6.1	0.8	K	9.3		59.2	47.4		9.4		52.4	10.9	b
8.8		26.0	54.4		9.5		2.9	53.1		9.5		7.4	38.3		5.8	34	11.9	22.9	Kb	9.5	0	11.8	38.6	
9.0		52.4	30.7		9.0		53.1	34.5		9.1		8.7	29.0	b	9.5		45.2	3.6		9.5		15.9	55.7	
8.7	15	22.9	49.4	K	9.0	39	20.4	35.2	B	9.3		23.7	1.0		8.0		50.3	36.1	K	9.3		50.3	28.0	
6.2		35.1	42.6	K	9.5		43.3	41.9		8.5	12	27.9	27.3		9.5	35	50.0	57.4		9.3		56.4	4.2	
9.5	16	2.0	52.8	B	9.0	40	33.8	34.5		9.5		33.6	27.4		9.4	36	11.8	30.0		9.5	1	0.0	4.2	
9.5		5.4	55.8		9.0		50.1	21.7		9.5	13	15.4	47.7		9.5		17.6	59.9		8.2		16.9	54.8	
8.3		13.3	4.5	K	8.8		53.8	47.9	Kb	9.5		30.8	51.8		8.8		18.8	57.1		9.5		20.3	34.2	
8.0		55.1	23.8	Kb	8.6	42	3.3	21.8	K	9.2		33.9	7.0		9.5		22.3	19.6		9.5		22.8	10.2	
9.5	17	8.4	21.0		8.9		9.4	35.7		8.7		59.1	49.3	K	9.5		24.2	5.0	-	8.0		29.8	27.6	B
9.0		22.2	15.9		9.0		47.1	8.3		9.4	15	0.1	22.1		9.5		39.3	0.5		9.5		53.7	7.6	
9.5		26.7	44.5		9.4		53.1	56.2		9.3	16	34.3	5.6		9.5	37	23.2	5.3		9.5	2	4.1	52.3	
7.7		28.7	35.8	K	9.1		55.1	53.1	R	9.5		52.7	41.2		9.5		35.3	16.6		9.4		4.3	59.4	
8.9		35.6	54.2		9.5	43	11.2	55.2		8.0	17	40.6	38.3	K	8.8		37.3	9.6	K	9.0	3	5.8	40.7	
9.5		50.6	43.1		7.5		13.0	48.6	K	9.1		43.6	0.9		9.0	38	4.4	20.7		9.2		17.1	42.2	K
9.4	18	26.9	7.1		9.5		45.4	9.0		8.7	18	50.9	13.0	Kb	9.5		18.0	57.8		4.2		20.8	10.7	K
6.7		33.1	18.6	K	9.3		48.3	36.4	B	8.8	19	41.1	51.8	K	9.4		24.4	15.4		9.5		28.5	7.3	
9.5		58.1	33.5		8.8	44	32.7	3.7	K	8.7		57.5	21.6		8.9	39	11.4	13.7	K	9.0		37.3	39.3	K
9.5	19	52.2	27.3		9.5		47.9	25.5		9.4	21	9.8	40.1		8.6		25.8	15.4	K	9.5		41.2	11.3	
9.3	20	37.3	58.3		9.3	45	33.1	57.1		9.3		33.8	38.4		9.5		32.9	10.8		9.3	4	2.8	20.8	
9.3		57.7	3.5	B	9.3		59.8	59.9		9.0		41.6	15.6	K	9.5		44.4	18.6		9.0		26.3	50.4	K
9.0	21	20.4	19.3		9.1	46	34.1	53.2		8.5	22	22.9	39.7		9.5		52.6	58.8		9.5	5	45.3	2.6	
9.4		30.0	58.8		9.0		49.9	34.7		9.5		24.4	50.6		8.3	40	9.0	24.5	L	9.5		48.8	57.9	
8.3		32.1	43.5	L	8.3	48	19.0	1.2	K	6.4		31.3	12.7	Kb	9.5		40.3	34.9		9.5	6	24.3	28.0	
9.5		55.4	1.2		9.5		52.8	1.8		9.5		52.2	44.6		9.2	41	38.4	3.8	K	9.0		29.8	48.0	
9.5	22	5.9	0.9		8.6	50	16.7	43.4	K	9.0	23	24.9	59.8		9.4	42	6.5	53.2	b	9.5		30.5	53.7	
9.4	23	35.6	13.0		9.3		31.4	15.1	B	9.5		38.7	3.0		9.5	43	28.8	18.3		9.5		50.3	25.9	
9.5		41.6	18.3	B	9.5		48.7	22.4		9.1	24	10.5	2.6	b	9.4	44	19.3	14.9		9.5	7	2.0	42.8	
9.5		42.3	25.5		9.3	51	8.1	24.1		9.3	25	1.9	48.8	R	8.8		33.8	31.1	Kb	9.2		14.4	11.8	b
9.5		58.4	57.1		9.4		56.5	3.0		8.3		20.9	48.3	K	9.5	45	41.8	38.3		9.5		18.8	31.7	
8.8		59.4	36.9	K	9.4	52	3.4	47.3		9.1	26	6.2	15.8		6.8	46	3.8	58.0	K	9.5		33.8	58.1	
9.5	24	20.7	38.7		8.8	53	6.6	48.6	K	8.7		9.3	42.7	L	7.0		35.8	46.3	K	9.3		36.8	55.3	
9.0		55.1	26.5		9.1		14.4	54.1	b	8.3		15.2	21.4	K	9.5	48	50.3	30.7		9.5		46.8	31.9	
8.8		58.4	8.8		9.0		54.2	28.0		9.0		23.2	56.7		9.5	49	15.8	48.4		8.5		58.9	58.0	K
9.0	25	4.1	13.6		9.4		59.3	17.8	B	9.2		29.0	50.3		9.1		18.8	24.5	b	9.5	8	11.1	27.3	
9.3		6.2	46.7		9.5	54	20.8	22.7		9.4		51.5	18.9		9.0		50.6	59.0	K	9.4	9	44.8	1.2	B
9.1		13.9	58.8	R	9.2		27.4	47.6		9.5	27	10.9	37.2		8.8	50	33.5	59.6	K	9.5		56.3	18.6	
9.5		43.5	54.5		9.0		27.9	23.7	R	9.5		13.5	44.8		9.1		49.8	8.6		9.5	10	10.0	34.7	
9.5	26	11.3	3.8		9.5		58.2	6.5		9.4		30.1	13.6		8.0		55.8	23.1		9.5		17.1	10.5	
		+	+				+	+				+	+				+	+				+	+	
10pr.		32.30	3.15		10pr.		32.76	3.01		10pr.		33.33	2.79		10pr.		33.71	2.59		10pr.		34.09	2.35	

DB 6.0 1855 BD ed 1903

3h—4h +19°

501—560				561—620				621—680				681—740				741—800			
	3h		+19°		3h		+19°		3h—4h		+19°		4h		+19°		4h		+19°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	10	33.3	29.0		8.0	28	1.7	4.5	K	9.5	47	23.0	51.1		9.5	6	54.5	27.0		9.0	27	12.9	17.4	
9.4		46.3	19.7		7.0		2.0	34.8	K	9.5		27.9	21.4		9.1	7	3.5	45.7	b	6.5		13.3	35.0	K
9.4		47.0	28.5		9.5		34.3	12.4		9.5		59.4	4.4		9.5		14.6	58.4		9.3		39.0	18.4	
9.5	11	0.5	45.9		9.0	29	41.5	45.2		8.7	48	4.3	19.0		9.5		43.8	44.2	B	7.6	28	5.3	27.9	K
8.3		10.1	11.4		9.5	30	18.3	34.2		8.5		27.8	38.9		9.4		53.1	12.2		8.5		13.2	10.8	K
8.8		20.1	2.6	K	9.5		20.8	25.6		9.3		38.3	24.1		9.2	8	16.0	54.3		9.3		41.5	26.9	
8.3		32.3	43.4	K	9.4		23.3	14.5		9.3		47.6	10.6		8.5		23.3	35.9	K	9.5	29	34.6	14.2	
9.0		44.5	43.6		8.8		25.8	54.3		9.2		52.0	46.1	B	9.5		24.8	52.5		9.5	30	13.9	50.1	B
8.0	12	3.2	11.2	K	9.3		55.8	18.0		8.6		56.5	50.7	B	7.8		34.9	18.4	L	9.5		31.4	57.2	B
7.5		4.8	20.1	K	9.5	31	15.8	37.3		9.5	49	19.2	18.4		9.4		55.4	5.5		9.5		58.9	29.4	b
7.2		31.6	58.7	L	9.5		29.0	12.2		9.5	50	0.0	4.5		9.4		55.9	25.5		9.5	31	29.5	24.0	
8.8		43.3	45.2		9.0		39.6	19.7		9.2		18.6	45.6		8.0	9	10.9	12.4	K	9.5		31.9	17.4	
9.5		46.5	58.3		9.5	32	22.3	29.4		9.5		23.2	20.5		9.5		49.2	59.7		9.5		46.8	24.3	
9.4	13	1.2	44.8		9.5		31.3	54.6		9.5		29.4	7.5		8.7	10	27.5	32.6	K	9.0	32	55.8	58.3	
9.5	14	6.8	46.3		9.5		38.0	42.9		9.5		39.9	11.5		9.5		33.9	30.1		8.9	33	4.1	59.4	K
9.1		15.8	36.7	b	9.2		46.6	8.0		9.5	51	7.8	10.6		9.2		45.7	7.3		9.5		4.3	17.6	
9.5		47.0	40.5		9.2	33	54.5	24.0		9.5		17.6	57.6		8.7		48.5	22.1	R	9.5		4.4	28.4	
9.5		52.0	46.1		8.5		57.8	13.9	K	9.5		27.7	59.4		8.2	11	1.2	35.0	K	9.5		6.5	34.2	B
9.5		52.7	6.6		8.0	34	6.3	40.8	K	9.3	52	4.6	24.1		9.4		17.5	24.6		9.0		12.9	48.1	K
9.5	15	7.8	12.8		9.3		11.0	24.3		9.5		6.5	10.1		9.4		26.7	10.0		9.5		39.8	29.9	
9.5		11.0	37.5		8.8	35	7.8	11.7	K	9.0		9.7	58.0	K	9.3		51.0	16.1	B	9.3		57.7	22.5	
9.4		34.3	53.0		6.0		24.5	12.5	K	9.3		12.8	52.1	K	9.5	12	11.1	47.8		9.2	34	8.2	56.2	a
7.5		41.8	22.7		9.5		49.8	48.4		7.0		39.8	47.8	K	9.5		26.0	52.2		9.5		19.8	28.4	
9.3	16	8.8	18.3		9.5	36	2.1	45.9		9.5		53.8	3.0		8.7	13	16.2	6.5	Kb	9.0		33.9	57.9	B
9.4		20.8	41.1		9.5		7.3	7.8		8.8	53	3.1	10.6		9.4		20.9	28.1	aB	9.4		41.1	38.4	
9.1	17	0.3	49.4		8.3		30.7	22.6		8.8		4.6	24.1		var		31.2	10.6		9.4	35	19.8	32.2	
9.0		22.4	1.7	K	8.8		40.0	6.4		8.5		32.2	31.4	K	9.5	14	26.2	3.7		9.4		26.5	52.6	
9.5		25.8	27.7		9.3	37	10.6	26.0		9.0		36.2	56.9		9.0		54.0	19.0	B	9.0	36	0.4	19.7	
9.5		37.8	40.1		9.0		32.2	52.2	K	9.3	54	17.2	9.0		9.5		56.5	23.0	B	9.5		10.0	0.6	
8.1		43.3	44.1	K	9.5		49.0	52.6		9.5	55	13.7	3.2	B	9.4		58.2	27.5		9.0		12.0	1.0	B
9.5	18	4.8	9.5		9.2		53.2	9.5		8.8		18.9	24.5		9.5	15	26.5	45.7		9.5		26.1	35.6	
9.5		31.6	57.3		9.5	38	2.3	14.9		8.5		39.9	34.8		9.5		33.9	46.4		9.4		43.1	31.0	
9.5		36.5	22.7		9.5		5.2	57.2		9.5		57.2	20.9		9.0		37.9	19.0		8.9		56.7	4.8	K
9.5		40.8	30.8		9.2	39	6.3	1.2	K	9.5	56	33.8	3.5		9.1		55.2	38.4		8.5	37	6.3	3.4	K
9.5	19	6.7	22.5		9.6		30.8	29.8		8.5		46.9	44.2	K	9.4	16	4.5	37.7		8.8		19.5	0.9	K
9.5		36.4	20.4		9.3		46.9	25.4		9.1		52.5	45.5		9.0		28.5	42.6	K	9.4		47.0	1.1	
7.0		40.3	57.2	K	9.5		57.6	7.7		9.3		57.6	51.8		9.0	17	2.9	21.2	K	8.2	38	6.0	13.5	B
9.4		54.1	15.5		9.5	40	24.3	15.9		8.3	57	8.9	33.5		9.0		3.2	25.0	K	9.5		17.8	4.6	
9.4		59.9	19.9		9.3		57.8	4.2		9.5		28.5	13.5		9.5		11.1	49.3		9.3		33.7	59.6	
9.5	20	10.8	34.9		8.2	41	32.2	7.7	K	9.5		37.0	4.6		9.5	18	31.2	55.0	B	9.4		54.7	41.2	
9.5		18.3	38.7		9.5	42	11.9	56.7		9.4		48.9	47.0		7.8		33.2	31.3	K	9.5	39	9.1	36.6	
9.5	21	26.3	11.5		9.5		25.4	57.7		8.9		50.8	28.4	B	9.5		37.2	56.5		8.7		14.3	3.4	
9.2		26.3	56.3		9.5		54.1	28.8	B	9.5	58	5.8	6.5		9.4		44.6	7.8		9.5		30.8	59.6	
9.5		37.0	28.0		9.0	43	11.3	23.0		9.2		11.3	54.4	B	9.5		53.0	35.8		9.4	40	6.4	57.6	
9.5		54.2	6.8		9.5		34.8	8.6		9.5		30.2	12.0		9.4	19	26.5	41.6		9.0		14.2	28.1	
9.5	22	0.8	38.4		8.5	44	13.0	10.8	Kb	9.5	59	20.1	12.7		9.3		37.5	16 3		9.0	41	6.1	18.0	
8.0		8.0	35.6	L	8.8		36.4	46.0		9.5		21.5	49.2		8.8	20	6.5	25.3	K	9.5		25.8	52.7	
9.5		8.6	9.5		9.5	45	7.7	4.2		8.0		54.5	20.8	K	9.4		16.6	53.1		9.5		27.7	6.5	
8.0		53.3	15.5	K	9.5		15.9	5.2		9.5	0	20.5	23.9		9.1	21	9.4	18.4		8.5		43.8	40.2	K
8.5	24	5.1	41.1	K	9.5		18.8	46.4		9.2		27.1	59.9		9.5		28.8	55.5		9.4	42	21.7	57.9	B
9.5	25	8.8	13.1		9.5		46.2	50.1		9.0		28.5	48.1		7.7		48.8	30.8	K	9.2		23.1	31.8	
9.5		21.8	27.0		9.5		49.2	53.6		6.2		43.5	14.0	Kb	9.5	22	32.8	34.2		9.5		35.0	58.3	B
8.3	26	3.4	52.3	K	9.5	46	8.6	23.1		9.5	1	2.0	20.5		8.5		44.4	49.2	K	9.3		43.8	54.5	B
8.2		7.5	17.9	L	9.0		17.3	41.0	K	9.1	4	17.9	31.5	b	9.2	24	10.4	49.2		9.5		55.2	6.4	
9.4		19.8	30.4		9.5		24.2	51.1		8.0		23.0	8.8	K	7.5		33.4	2.3	K	9.4	43	7.1	42.5	
8.5		35.8	20.0		8.8		34.9	41.0	K	9.0		40.0	10.6	K	9.0		54.9	30.5	K	9.1		20.1	33.8	
9.1		46.8	43.8	Kb	9.3		43.5	8.3		9.5	5	6.0	29.0		9.5	25	0.9	14.2	R	9.5		42.0	42.9	
9.5	27	11.8	25.2		9.5		56.6	17.2		9.5		26.0	54.0		9.5		9.2	5.5		9.5		50.2	40.6	
9.5		12.8	26.6		9.4	47	9.9	53.2		8.3		54.8	12.4	Kb	9.5		57.7	3.5		9.5	44	0.1	42.6	
9.5		31.7	53.2		9.5		12.2	34.7		9.5	6	46.7	59.0	B	7.0	27	9.8	40.5	K	8.8		2.6	52.2	K
10pr.			34.32	2.17	10pr.			34.57	1.94	10pr.			34.77	1.73	10pr.			34.97	1.47	10pr.			35.14	1.20

801—860					861—920					921—980					981—1040					1041—1100				
	4ᵃ—5ᵃ		+19°			5ᵃ		+19°			5ᵃ		+19°			5ᵃ		+19°			5ᵃ		+19°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.0	44	8.5	45.4		9.4	3	6.9	6.1		9.5	17	1.5	26.5		9.5	28	28.2	1.8		8.8	34	32.0	59.0	B
9.3		59.1	38.4		9.4		13.5	30.7		8.8		1.5	11.7		9.5		36.2	49.8		9.5		38.1	44.5	
9.5	45	5.8	50.5		9.0		22.7	44.1	K	9.5		32.4	54.3		9.2		37.5	7.7		9.5		44.8	46.6	
9.5		23.7	9.9		9.3		24.4	11.6		9.2		34.0	18.5		9.5		38.2	46.3		9.5		58.2	10.1	
9.5		36.2	47.7		9.1		27.5	44.8	K	9.3		45.4	49.5		9.5		53.4	18.9		9.2		58.3	27.6	
9.4		38.6	54.1		9.2		38.6	57.1		9.4		55.0	39.2		8.8		59.9	41.1	K	9.5	35	0.0	5.7	
9.5		50.4	20.0		9.5		50.7	46.6		9.5	18	5.9	47.5		9.5	29	2.7	50.8		9.5		19.2	8.4	
9.2	46	18.4	31.9	B	9.5		59.0	59.7		8.9		40.4	51.6		9.4		22.2	20.6		9.5		20.6	16.4	
8.5		21.1	42.9	K	9.1	4	16.5	34.1		9.5		50.8	54.8		9.5		26.2	35.2		9.0		31.4	47.3	
9.2		24.3	45.4	K	9.5	5	24.6	18.0		9.5	19	4.1	10.8		9.5		41.9	55.2		9.5		55.1	37.2	
7.0		26.9	15.4	K	9.4		37.0	58.3		9.5		28.0	58.6		9.5		42.0	25.3		9.1	36	3.0	33.1	Kb
9.1		51.6	2.6	B	9.0		39.9	43.1		9.4		54.9	24.4		9.2		56.1	20.5		9.4		4.3	55.3	
9.5		56.6	30.6		9.0		46.8	5.2		9.5	20	13.5	40.7		9.1		58.8	54.3		9.5		5.5	41.3	
9.5	47	5.2	21.7		9.5		54.6	53.1		9.1		20.4	55.8	K	9.0	30	4.2	57.0		9.5		11.4	42.6	
8.2		7.4	45.8	K	9.3		57.8	6.6		9.2		20.6	33.1	b	9.5		5.0	20.3		9.4		14.9	49.7	
9.5		36.5	40.4		7.5	6	37.4	52.8	K	8.7		28.7	54.8	K	9.5		6.9	10.6		9.5		15.1	41.6	
9.5	48	24.5	6.5		9.5		51.5	21.0		9.2	21	12.0	38.6		9.2		21.9	56.5	a	9.4		17.0	21.7	
9.2		38.9	8.3	K	9.0		55.7	14.8		8.8		16.0	54.7	K	8.2		33.8	41.0	K	9.0		56.5	18.5	
9.0	49	1.0	5.7	K	8.3	7	10.7	33.2	K	9.0		54.9	42.9		9.5		37.5	41.8		9.5	37	6.6	54.9	
9.4		3.3	5.1	B	7.8		16.4	47.3	K	9.5	22	17.7	51.7		9.5		51.1	3.0		9.5		16.4	10.2	
9.5		5.1	48.3		7.8		22.5	57.4	K	9.0		20.7	39.0	R	9.5		53.8	10.6		9.5		23.0	35.7	
9.5		32.5	10.1		9.5		42.0	37.6		9.2		21.2	5.0		9.5	31	12.8	3.1		9.5		28.1	20.0	a
9.5		33.0	28.0		9.1		47.1	7.7	a	9.5		49.7	58.8		8.7		21.2	17.9		9.4		33.5	16.9	
9.5		33.6	50.4		7.2	8	15.3	57.4	K	9.5		50.1	55.7		7.8		35.1	35.5	K	9.0		39.7	18.3	
9.2		40.4	29.3		8.5		16.5	8.0		9.4	23	6.9	31.0	R	9.5		41.7	21.7		9.5		46.9	39.5	
9.5		46.5	58.0		6.8		56.4	58.3	P	8.3		12.5	25.1	K	9.3		55.6	7.5		9.5	38	0.5	20.5	
9.4	50	10.2	58.6	B	9.5	9	10.8	5.8		9.5		26.3	12.1		9.5	32	2.5	1.0		9.0		1.9	52.4	
9.2		14.5	42.8		8.5		15.0	49.3	Kb	9.4		30.2	1.9		9.3		2.8	19.7		9.4		20.3	2.2	
9.2		33.4	24.5		9.0		39.7	9.4		9.5		30.8	10.8		8.8		13.4	2.6	Lb	9.5		29.6	21.6	
9.0		37.7	30.0		9.5		47.0	49.0		9.5		34.8	38.7		9.5		18.5	6.5		9.5		30.8	13.2	
8.2		51.2	58.3	K	9.5	10	17.8	7.9		8.0		50.8	0.7	K	9.5		27.0	49.0		9.4		57.5	49.4	
9.3	51	11.8	44.8		9.0		30.9	31.0		9.5	24	18.5	17.9		9.5		32.7	49.3		9.3	39	9.0	33.5	
9.5		24.1	39.3		6.5		40.6	57.7	K	8.5		32.0	55.2	R	9.2		33.7	14.8		9.1		10.9	38.0	
9.1		45.0	33.1	b	9.2	11	3.2	35.2		9.5		58.7	34.0		8.3		34.5	58.8	K	9.5		17.7	50.5	
9.5	52	37.5	58.8		9.4		6.0	23.4		9.5	25	3.3	6.2		9.5		48.0	22.0		9.5		37.0	14.8	
9.0		48.0	43.4		9.5		15.9	8.6		9.4		5.0	53.7		9.5		50.7	18.5		9.5		46.8	30.4	
9.5	53	0.2	52.8		9.5		28.2	12.3		9.0		8.6	18.5		9.4		51.7	36.4		9.1	40	1.5	7.8	
9.5		16.0	38.0		6.5		45.4	26.8	K	9.5		23.3	28.5		9.5		57.9	53.5		9.5		4.4	13.8	
8.8		19.9	44.5		9.5		53.0	42.7		9.5		25.0	49.5		8.4	33	3.0	8.4	L	9.4		15.4	52.1	R
9.5		20.1	35.4		9.5	12	7.1	53.6		9.5		28.6	18.6		9.5		3.4	42.4		9.3		24.0	10.7	
9.5		35.8	30.3		9.0		8.2	48.3		9.5		29.4	31.2	R	9.5		4.1	37.9		9.4		30.6	0.9	
9.2	54	4.6	10.3		6.5		22.0	40.3	K	9.5		55.9	5.4		9.3		11.1	27.3		9.2		31.5	45.6	b
8.8		27.5	18.5	K	9.5		50.8	27.9		9.5	26	0.5	50.4		8.0		11.1	17.2	L	9.3		42.8	22.0	
9.5		45.9	10.0		9.5		56.0	9.6		9.5		11.0	41.8		8.5		12.0	21.5	L	9.4		55.2	59.0	
9.5	55	45.5	49.7		8.6	13	34.5	56.2		9.5		20.5	40.3		9.2		13.2	43.9	R	9.5		57.3	58.5	
9.5	56	59.0	14.0		8.5		40.9	41.0	K	8.9		22.5	21.7	L	9.3		14.1	27.8		9.5	41	3.5	2.5	
6.5		59.9	35.8	K	9.1		48.7	54.8	a	9.4		22.9	32.5		8.9		18.0	35.2	K	9.3		25.6	31.8	
9.3	57	16.2	52.0		9.5		53.4	5.7		9.5		28.1	25.6		9.1		25.8	36.5	a	9.2		28.6	52.3	
9.1	58	42.0	8.7	Rb	9.3	14	14.5	5.7		9.3		30.5	10.4		9.4		31.1	59.2		8.1		36.3	7.6	Lb
9.5		59.3	37.6		9.5		15.6	58.3		9.0		40.8	36.5	K	9.5		34.2	38.7		9.3		46.9	58.1	
9.4	59	15.0	16.5		9.5		24.6	24.1		8.1		44.3	39.5	K	9.5		40.5	59.7		9.0	42	2.0	38.6	
9.1		18.5	56.5		9.5		47.8	8.5		7.5	27	28.2	27.1	K	8.9		41.0	33.9	K	9.4		16.8	11.7	
6.5	0	16.7	40.7	Kb	9.5		56.6	12.4		8.7		32.4	30.3	K	9.5		42.0	12.3		9.5		19.9	3.3	
9.5		26.0	48.4		8.5	15	21.9	51.7	K	8.6		35.9	4.7	K	9.5		42.9	19.9		9.5		22.8	59.5	
9.5	1	12.0	14.4		9.5		24.0	49.7		8.9		39.0	34.0	K	9.5		59.0	29.8		9.5		23.1	5.2	
9.5		25.1	12.3		9.5		30.5	28.3		9.5		39.4	43.0		9.4	34	0.0	44.9		9.0		26.8	49.1	
9.0	2	14.4	30.3		9.0		32.7	13.1	K	9.5		49.8	10.8		9.5		13.9	26.5		9.3		44.8	15.8	
8.9		17.4	5.5	K	9.5		36.0	34.3		9.3		58.7	50.4		9.0		14.3	46.9		9.5		51.0	53.0	
9.3		20.1	16.8		9.3	16	16.5	1.7		9.4	28	11.5	7.6		9.1		18.5	57.4	a	9.5		57.9	44.8	
9.1		59.8	6.8		9.2		24.7	2.9		9.5		11.7	52.8		9.5		20.7	36.9		9.0	43	1.8	18.6	
		+	+				+	+				+	+				+	+				+	+	
10pr.		35.24	1.00		10pr.		35.34	0.72		10pr.		35.39	0.53		10pr.		35.42	0.40		10pr.		35.44	0.31	

1101 — 1160					1161 — 1220					1221 — 1280					1281 — 1340					1341 — 1400				
	5ᵐ		+19°			5ᵐ		+19°			5ᵐ—6ᵐ		+19°			6ᵐ		+19°			6ᵐ		+19°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	43	6.1	33.8		9.0	50	54.9	0.1		9.5	59	46.5	27.7		8.2	7	37.1	5.8	K	9.0	16	29.2	50.2	K
9.4		14.8	6.9		9.0	51	5.3	55.5		9.3		51.9	11.3		8.8		42.5	38.8		9.5		45.7	2.6	
9.5		15.1	26.3		9.0		7.9	54.1		8.9		58.0	28.6	K	9.5		49.7	26.6		9.5		49.2	34.5	
9.4		18.1	27.6		9.5		23.3	9.3		9.2	0	0.0	56.1		9.5		52.0	55.1		9.5		50.7	4.3	
9.3		18.2	3.4		8.5		34.5	57.9	K	9.0		14.8	4.6		7.6		59.8	3.2	K	9.2	17	3.4	30.6	b
6.8		18.7	28.6	K	9.5		41.5	10.3		9.3		16.1	53.3		9.5	8	24.3	0.7		9.5		5.8	46.0	
9.5		20.1	32.4		9.5		43.9	37.4		9.2		16.8	40.5		9.2		25.0	38.1		9.5		6.6	56.1	?
9.2		26.6	50.1		9.1		58.3	2.4		9.5		21.9	59.9		9.3		27.6	45.7		9.5		38.0	16.5	
9.5		35.1	4.8		9.3		59.0	41.2		9.2		22.2	30.8		9.3		47.5	24.6		9.5		39.5	35.4	
6.0		48.7	49.4	L	8.7	52	19.4	47.8		9.0		23.1	11.9		9.5		48.9	53.7		9.5	18	6.4	29.2	
8.3		50.4	6.5	K	9.3		34.4	37.7		9.3		31.8	40.9		7.6	9	17.2	30.7	K	9.3		8.8	55.1	
9.5		55.9	50.6		7.8		37.2	24.7	L	8.9		37.6	46.6		9.5		17.9	44.2		9.4		18.7	44.6	
7.5		56.2	42.1	L	9.5		45.1	52.7	Rb	9.2		40.4	11.2	α	9.5		20.0	6.8		9.5		42.0	2.9	
9.5	44	4.3	33.8		9.1		50.0	22.7	R	9.5		44.9	32.5		9.5		39.4	56.4		9.0		50.4	32.4	
9.2		9.7	33.4		9.3	53	2.9	10.9		8.5		54.9	14.8		9.5		49.6	50.9		9.5		58.1	4.2	
9.5		50.1	32.3		9.3		25.2	45.0		9.5	1	12.9	7.1	ab	9.4		52.0	54.4		9.5	19	6.4	33.8	
9.5		57.4	51.7		9.5		29.4	14.3		8.3		25.0	41.9	K	8.8		58.8	37.3	K	9.4		23.6	14.8	
9.5	45	0.1	40.6		9.5		36.3	30.7		9.3		27.5	40.4		9.5	10	6.1	22.8	α	9.5		25.8	58.1	
9.5		1.1	33.4		8.8		36.9	15.5	K	9.4		31.8	32.2		9.0		13.0	23.5		8.9		36.0	7.0	
9.4		33.5	2.0		9.3		48.0	57.6		8.8		38.8	7.5	K	9.2		22.7	57.9		9.5		42.9	2.6	
9.4		35.2	52.8		9.5	54	1.8	7.9		9.5		46.9	33.2		9.5		43.1	50.7		9.5		57.0	2.7	
9.4		42.2	0.9		9.0		4.8	56.2	K	9.5		65.9	33.4		9.5	11	1.4	34.0		9.5	20	9.8	50.3	
9.5		44.4	13.6		9.3		19.3	28.5		9.4	2	20.7	56.9		9.3		17.0	56.5		9.5		12.0	15.1	
9.5	46	2.2	18.6		9.5		19.6	55.5		9.5		20.8	2.0		9.5		19.3	16.6		9.5		19.8	34.5	B
9.2		6.7	14.7		9.0		34.5	23.1		9.4		27.7	25.0		8.2		37.1	55.8	K	9.3		30.8	55.5	
6.3		22.0	43.6	L	5.6		52.5	41.3	Kb	9.0		31.5	6.9		9.5		58.0	6.9		9.5		31.9	4.7	
9.0		24.4	12.7		9.5	55	2.9	7.1		8.8		32.3	14.8		9.0	12	2.0	44.1		9.2		41.5	58.0	
8.6		25.0	34.1		9.5		3.0	44.5		9.4		41.4	59.9	B	8.4		27.1	58.8	K	9.5		59.8	58.5	
9.5		26.3	47.0		9.4		10.4	4.5		9.3		54.6	43.9	α	9.4		27.4	20.5		9.4	21	14.6	18.5	
9.5		30.3	29.5		9.5		10.6	13.7		9.4		56.5	59.4		9.5		41.4	34.3		9.4		19.9	8.0	
8.5		34.8	39.1	L	8.9		35.0	14.7		9.5	3	21.8	13.5		9.5		46.0	0.3		9.1		33.9	27.7	b
9.4		59.7	41.9		9.5		52.2	41.8		9.2		22.4	47.8		9.5		57.1	15.0		9.5		50.9	58.5	
9.5	47	4.3	51.0		9.4		54.1	12.0		6.0		27.4	49.6	Kb	7.5	13	0.7	57.3	Kb	9.5		52.0	48.2	
9.2		17.8	21.9	K	9.5	56	35.9	55.4		8.2		29.0	32.9	B	8.7		8.9	39.9		9.5		52.7	42.2	
9.5		21.6	52.2		9.3		50.2	5.8		9.0		37.1	27.7		9.4		18.8	3.5		8.5		53.1	23.0	
8.3		30.7	20.2	K	9.3		59.6	22.6	α	8.3	4	26.2	51.0		9.5		23.6	0.0		9.2	22	11.8	36.7	
9.5	48	1.3	11.6		9.2	57	5.5	14.7	α	9.2		29.3	10.8		8.8		26.9	45.7	K	9.5		15.9	49.2	
9.0		1.4	43.0		9.3		8.3	40.1		8.8		38.2	28.3		8.0		41.0	45.6	K	9.5		35.0	2.2	
8.7		2.8	12.9	K	9.2		19.9	10.3		7.8		39.5	2.5	L	9.4		48.8	13.7		9.5		37.3	42.8	
9.2		5.6	13.3	α	9.5		23.6	17.6		9.1		42.6	46.3		8.7		49.4	26.1	K	9.5		40.6	29.3	
9.5		12.4	42.8		9.4		27.1	49.0		9.3		53.7	43.6		9.5	14	1.0	21.9		8.2	23	29.2	48.8	K
9.2		23.4	34.5		9.2		41.7	36.4		7.8	5	11.5	22.5	L	9.4		15.7	6.2		9.5		49.6	29.1	
9.5		28.9	37.4		8.5		51.0	14.8	K	8.7		31.3	39.5		9.1		29.8	17.9	b	9.5	24	0.6	16.5	
9.2		36.9	22.5		9.4		56.3	23.1	R	8.4		35.0	30.2		9.5		36.0	6.9		9.3		8.9	26.6	
8.2		37.9	9.8	Kb	9.4	58	6.8	6.0		9.1		35.2	0.0		8.7		41.3	44.3	K	9.5		20.0	17.6	
9.0		38.5	55.0	R	9.5		11.1	59.0		9.3		48.5	38.3		9.5		43.0	27.5		9.0		22.0	9.1	
9.5		44.0	36.9		9.4		12.3	57.9		9.5		57.1	43.9		9.4	15	9.1	49.9		8.3		41.5	57.0	K
9.5	49	10.9	56.3		9.4		17.4	43.9		9.2	6	6.6	16.7		9.3		9.1	23.9		9.5		44.3	2.3	
9.4		18.4	1.5		9.5		20.1	26.8		8.8		10.3	19.8	K	9.5		20.9	9.5		9.3		56.4	8.1	
9.3		27.9	27.4		9.3		22.2	2.2		6.2		19.7	12.3	K	9.5		21.2	5.5		9.5	25	6.9	18.3	
9.0		42.0	41.0		9.5		22.3	23.3	R	9.5		31.9	18.7		8.9		26.5	58.6	K	7.2	26	5.9	32.0	Kb
9.4		58.3	2.5		8.8		22.7	28.7		9.3		32.3	57.1		9.5		33.0	20.3		9.2		18.8	54.3	
9.5	50	16.9	20.8		9.2		24.8	7.5		9.2		36.6	28.8		9.5		41.5	8.2		9.3	27	2.7	37.4	
9.5		21.4	32.6	α	9.3		26.6	1.4		9.5		36.6	3.6		9.5		48.3	58.8		7.8		4.1	6.9	L
9.5		28.9	14.0		9.5		33.6	2.8		9.1		54.0	3.9		8.8	16	4.6	46.4	K	9.5		13.0	34.5	
9.3		35.4	23.6		9.1		57.2	0.3		8.8		54.2	33.7		9.4		7.1	46.2	α	9.1		19.8	3.3	
9.0		35.7	32.2		9.5		58.2	19.3		9.5	7	6.8	9.3		9.4		13.1	59.5		9.3		20.8	34.8	
9.5		48.0	16.5		9.1	59	5.5	42.8		9.5		8.8	9.9		9.5		23.5	24.2		9.5		22.5	15.1	
9.4		48.9	9.3		9.5		32.1	28.3		9.5		13.7	17.5		9.3		25.0	55.2		9.3		32.9	30.9	
8.8		54.0	45.3		9.5		43.3	32.6		9.5		17.7	17.1		9.5		26.7	36.5		8.3		34.1	40.5	Kb
		+	+				+	+				+	—				+	—				+	—	
10pr.		35.45	0.20		10pr.		35.45	0.07		10pr.		35.45	0.05		10pr.		35.45	0.19		10pr.		35.44	0.31	

m	6ʰ	+19°	
	1401—1460		
9.5	27 40.7	6.1	
9.5	48.6	32.0	
9.5	58.4	57.7	
8.8	28 8.4	49.2	
9.5	27.3	51.7	
7.8	29.8	16.3	K
9.4	40.2	4.6	
9.3	43.4	59.1	
9.2	46.6	7.1	
9.3	29 2.3	5.7	
9.5	5.7	22.4	
9.5	8.4	3.6	
9.5	8.8	43.4	
9.4	11.5	18.4	
8.5	21.0	32.7	
9.2	23.1	54.1	
9.4	26.1	25.5	
8.7	31.5	59.5	
9.5	44.3	58.6	
9.5	30 5.7	34.1	
9.5	15.5	30.4	
9.5	16.5	44.8	
8.7	25.8	22.7	K
8.2	29.0	43.4	K
9.0	35.9	14.9	
9.2	31 18.0	36.0	
9.3	18.7	10.9	
9.2	19.3	59.7	
8.0	23.5	26.3	K
7.5	28.9	47.6	K
9.4	31.7	42.8	B
8.8	37.6	54.2	K
8.7	50.4	32.4	S
9.5	51.3	38.2	
9.2	32 28.4	54.3	K
9.5	31.4	54.8	
9.3	39.2	55.0	α
9.1	40.5	32.4	
8.8	51.3	3.8	
9.5	33 18.5	58.2	
9.1	20.3	52.8	
9.0	22.6	18.4	
9.4	24.8	17.5	α
9.2	34 1.0	50.4	
9.1	3.2	44.6	K
8.4	11.2	43.5	K
9.1	21.4	17.3	K
9.2	22.0	37.5	B
9.4	30.1	3.5	
9.5	31.8	28.9	
9.5	43.9	19.5	
9.5	49.3	59.3	
9.2	35 7.2	52.3	
9.5	17.7	31.3	
9.4	24.3	58.4	
9.4	40.0	1.8	
9.5	42.4	32.0	
9.5	49.2	47.6	
9.5	36 9.3	16.1	
8.2	19.3	40.2	B
10pr.	+ 35.41	— 0.46	

m	6ʰ	+19°	
	1461—1520		
9.4	36 25.2	18.6	
9.5	37.5	12.2	
8.8	56.4	16.1	K
9.5	37 5.9	24.8	
9.5	11.6	56.1	
9.4	20.0	4.6	
9.1	23.9	53.6	
9.0	27.1	18.3	K
9.5	28.5	8.1	
8.8	37.5	36.3	K
9.4	39.3	44.0	B
9.3	43.1	2.1	B
9.5	49.5	47.3	
9.4	52.0	48.0	
9.0	38 24.4	42.1	
9.5	38.8	27.5	
9.2	39.6	8.9	α
9.2	53.0	3.0	
8.8	39 2.5	5.7	
8 6	23.1	20.1	
9.2	38.0	20.2	
9.5	40.4	3.9	
9.0	40 9.6	35.6	
9.0	10.0	23.0	
9.4	23.5	2.6	B
9.5	29.3	32.1	
9.1	40.0	40.1	
9.5	41.3	20.6	
9.5	47.7	51.0	
9.5	54.7	33.7	
9.3	41 3.5	51.6	
7.9	5.9	19.5	K
9.5	27.2	4.6	
9.5	27.8	54.3	
9.5	30.5	18.4	
8.5	37.6	21.7	K
9.5	49.9	4.6	
8.2	42 1.2	27.6	K
8.9	4.8	45.9	
9.5	6.0	42.7	
9.2	17.3	0.5	
9.1	19.1	15.8	
9.5	22.4	57.5	
9.5	33.8	58.1	
9.5	34.0	0.2	
9.5	46.9	15.1	
9.4	56.9	49.8	
9.5	43 18.7	28.1	
9.0	24.8	50.2	
9.5	26.5	30.9	
9.5	29.3	47.3	
9.5	30.4	1.9	
9.5	37.5	25.4	
9.5	43.9	12.3	
9.5	52.8	43.0	
9.4	44 14.7	21.9	
9.4	31.5	48.4	
9.4	35.7	44.9	
9.0	36.1	36.8	L
9.5	40.6	53.2	
10pr.	+ 35.38	— 0.59	

m	6ʰ	+19°	
	1521—1580		
8.7	44 54.8	26.5	K
9.5	45 14.7	38.4	
9.5	16.7	59.9	
9.2	45.5	44.4	α
8.3	49.4	46.0	K
9.0	54.0	47.4	K
9.1	46 13.3	43.4	K
9.5	18.9	31.3	
9.5	20.4	7.6	
9.5	38.3	57.9	
9.2	52.5	52.1	
9.1	53.6	27.1	R
9.4	57.3	28.1	b
9.3	47 7.6	16.9	
9.4	19.2	57.2	
9.5	23.3	47.7	
9.5	26.0	47.5	
9.5	30.5	53.2	
9.2	33.9	41.2	
9.5	48.7	22.3	
9.0	56.0	49.4	
9.5	58.5	26.4	
9.5	48 19.8	12.9	
9.5	20.0	3.9	
9.5	21.0	18.5	
8.3	27.6	39.3	K
9.4	31.1	53.9	α
8.4	45.0	41.0	K
9.5	50.0	7.5	
9.5	53.3	16.3	B
9.5	57.9	16.5	
7.7	59.9	55.0	K
9.0	49 6.7	46.4	
9.3	21.4	52.1	
8.9	32.4	7.2	Kb
9.5	43.3	17.6	
9.3	48.1	28.9	
9.4	51.4	58.2	
7.4	50 0.3	24.9	K
9.5	21.4	4.6	
9.2	31.8	37.2	
9.5	40.0	27.2	
9.5	48.7	48.4	
9.5	58.4	42.0	
9.5	51 0.0	52.2	
9.5	11.9	28.1	
9.4	17.3	33.4	
9.5	22.4	4.7	
9.5	31.3	37.2	
9.4	43.0	39.3	
9.5	49 0	30.3	
9.5	59.4	33.4	
8.4	52 25.4	7.3	K
8.4	32.4	4.4	K
8.6	34.7	48.7	
8.0	38.3	24.7	Kb
9.5	41.1	44.2	
9.3	47.9	4.0	K
9.5	50.7	42.4	
9.1	53 19.0	37.5	
10pr.	+ 35.34	— 0.70	

m	6ʰ—7ʰ	+19°	
	1581—1640		
9.5	53 22.9	8.9	
9.4	34.6	51.2	
9.3	36.0	26.0	
8.7	39.2	39.3	K
9.4	43.7	44.3	
8.8	52.0	25.6	
9.2	57.4	27.2	α
9.0	58.1	29.9	
*9.5	54 44.8	31.3	
*9.5	55.4	44.8	
7.3	59.5	25.4	K
9.3	55 18.1	50.9	
9.5	18.7	1.5	
9.5	22.9	45.9	
9.4	51.5	14.2	
9.5	52.2	46.1	
9.0	55.5	3.4	K
9.5	56 2.5	12.3	
9.5	4.5	19.4	
9.1	57 24.0	58.0	K
8.7	34.4	15.8	K
9.0	54.5	5.9	K
9.5	54.8	54.2	
9.5	58 3.3	52.8	
8.0	6.9	19.7	K
9.5	8.3	10.6	
9.5	16.1	7.5	
9.5	33.3	39.4	
9.5	34.0	16.5	
9.4	41.7	6.9	
9.5	47.0	53.9	
8.6	51.9	25.5	K
9.5	52.3	15.3	
9.5	56.5	52.1	
9.5	59.4	8.0	
9.5	59 56.2	27.6	
9.5	0 16.6	53.0	
9.4	16.9	38.8	
9.2	20.7	8.8	B
8.5	22.9	32.1	L
9.5	30.8	59.2	
8.8	32.0	17.6	
7.4	36.9	46.7	Kb
8.3	42.5	16.0	L
8.5	1 10.1	30.6	K
9 3	18.8	57.0	
9.5	22.8	36.4	
9.5	23.1	43.4	
8.0	25.9	4.3	L
9.5	40.8	31.6	
8.3	45.9	11.1	K
9.0	50.0	24.1	K
9.5	2 1.2	52.0	
8.6	7.3	32.2	K
8.5	8.8	33.5	K
9.5	17.1	57.7	
9.5	19.4	34.3	
9.5	31.8	59.2	
9.0	33.8	6.1	K
9.3	42.0	11.6	
10pr.	+ 35.30	— 0.85	

1589ᵃ			
9.5	51	54.4	25.4

m	7ʰ	+19°	
	1641—1700		
9.3	2 42.9	17.3	
9.4	52.7	59.1	
9.5	3 15.5	41.9	
8.8	22.0	30.9	K
9.0	25.6	23.1	
9.5	41.7	12.7	
9.4	47.0	37.0	
9.4	54.7	54.5	
9.4	4 45.1	34.7	
7.8	45.2	9.6	K
9.4	53.5	45.4	
8.6	5 14.6	27.6	K
8.9	17.1	12.4	K
8.5	34.9	44.4	K
9.4	47.0	28.6	
9.5	53.3	36.3	
9.0	56.8	13.5	K
9.5	6 2.5	48.1	
8.3	5.7	56.9	K
9.4	24.9	28.3	
8.0	51.6	3.7	K
8.0	53.6	18.7	K
9.5	7 5.1	50.0	B
9.5	6.2	3.9	
9.3	17.9	30.4	K
8.7	35.3	49.8	K
9.2	37.5	25.6	K
9.3	59.2	44.3	B
9.5	59.2	52.0	
9.5	8 2.2	52.5	
9.0	22.7	50.8	K
9.5	38.4	28.6	
9.5	9 9.6	49.7	
9.5	14.2	40.5	
8.5	21.1	47.9	K
9.5	22.3	8.6	
8.8	29.9	45.3	
9.0	36.8	50.7	K
9.2	54.4	17.6	
9.5	10 1.5	42.1	
9.5	2.0	10.9	
9.5	8.5	53.4	
9.2	33.5	17.9	
8.5	11 19.0	58.3	K
7.7	31.4	47.5	K
8.8	41.7	46.9	K
9.5	51.4	59.3	
9.0	55.6	41.7	K
8.9	12 0.2	39.3	K
9.5	11.7	58.3	
9.5	11.9	45.8	
8.6	14.2	8.7	
9.3	39.1	10.5	α
9.5	40.9	32.3	
9.5	56.7	38.9	
9.2	13 2.1	34.6	
9.5	3.8	28.4	
9.4	20.3	12.7	
8.8	23.0	27.5	K
9.5	29.8	52.0	
10pr.	+ 35.25	— 0.98	

QB6.0 1855 BD ed 1903

r—8ʰ +19°

1701—1760					1761—1820					1821—1880					1881—1940					1941—2000				
	7ʰ		+19°			7ʰ		+19°			7ʰ		+19°			7ʰ—8ʰ		+19°			8ʰ		+19°	
m		″	′		m		″	′		m		″	′		m		″	′		m		″	′	
9.5	13	36.4	22.9		9.1	25	42.0	43.5	b	9.1	37	9.3	0.5		9.5	48	49.3	16.8		9.0	1	38.0	28.0	K
9.5		37.0	31.3		9.5		52.4	28.5		9.5		10.1	46.3		9.2	49	10.8	34.2	K	9.5	2	10.1	14.1	
9.5		45.3	56.9	B	9.5	26	0.5	46.7		9.5		16.5	43.2		8.9		14.7	11.1	K	9.5		23.9	11.0	
9.5		49.8	4.1		9.2		1.1	7.9	K	9.5		50.2	26.3		9.1		15.9	31.2	K	9.3		25.2	27.9	Kb
9.3	14	12.1	25.9		9.5		5.2	32.1		9.5	38	12.0	22.0		9.5		39.1	51.6		9.5		43.8	50.6	
9.5		23.6	3.1		9.3		22.6	55.6		9.4		13.4	35.7		9.5		50.1	17.2		9.4		48.1	58.4	
9.2		47.2	28.1	K	9.5		27.9	49.7		9.2		16.9	16.0	K	9.5	50	0.3	47.7		9.2		50.0	33.3	K
9.3		48.0	54.6		9.5		30.9	19.3		9.5		19.2	14.4		9.5		9.1	17.2		9.2		54.3	41.7	K
9.5	15	8.2	21.7		9.5		49.7	22.0		9.5		19.5	23.2		9.5		34.7	56.4		9.5	3	38.5	14.4	
9.5		10.8	18.1		9.5	27	10.3	56.2		9.5		28.2	0.6		9.5		35.4	22.3		9.5		38.8	32.8	
9.3		15.4	32.3		9.5		11.0	18.2		9.5		36.0	13.7		9.4		37.0	36.6		9.5		44.7	22.2	
9.5		23.2	48.4		9.0		40.9	3.1		8.2		41.3	8.1	K	9.2		43.2	52.5	K	9.5	4	10.1	22.7	
9.5		26.0	22.7		9.5		43.4	45.2		9.2		48.8	11.5	K	9.5	51	4.4	26.4		9.5		19.5	28.9	B
9.5		28.8	23.4		8.7		56.2	15.3	R	9.3		49.3	33.7		9.5		22.1	23.9		9.5		34.0	18.0	
9.5		46.9	49.4		8.8		57.2	33.1		9.5		53.8	37.5		9.4		55.2	54.6	K	9.5	5	36.2	25.5	
9.0		52.4	35.1		9.0	28	13.6	17.9		9.5	39	3.0	32.1		7.0	52	8.8	14.0	L	9.5	6	3.8	46.4	
8.5		56.6	11.1	L	9.0		31.0	54.9	R	8.8		6.3	23.6		9.5		11.1	32.2		9.5		17.4	57.1	
9.5	16	6.5	25.9		9.4		33.0	16.8		9.5		55.8	21.8		9.5		20.2	1.3		9.4		19.9	32.2	Bb
9.3		40.4	31.0		9.3		38.1	23.5		9.5		56.4	56.9		9.5		27.4	57.7		9.5	7	12.1	13.7	
7.9		41.7	16.7	L	9.5		43.4	52.8		9.5	40	7.1	48.3		8.6		49.0	59.6	K	9.5		14.1	37.9	
9.5		57.9	21.2		9.3		45.7	25.5		9.5		30.6	54.9		9.5	53	26.4	23.2		9.5		19.4	25.0	
9.5	17	22.4	13.6		9.5	29	1.7	1.2		9.4		36.9	31.2		9.5		35.7	9.3		9.2		32.7	0.1	B
9.5		23.8	3.4		9.5		3.9	32.5		9.5		37.0	26.5		9.3	54	18.2	8.8	K	7.6		37.4	7.5	K
9.5		26.0	20.9		7.0		4.1	14.2	L	9.5		40.7	47.0		9.5		18.6	31.8		9.1		42.1	8.2	K
9.5		30.7	47.0		9.3		8.3	35.6		9.3	41	2.9	38.4		9.5		29.4	23.4		9.5	8	26.0	3.4	
9.5		48.4	53.1		9.5		14.9	47.0		9.5		22.1	2.0	c	9.4		35.0	7.5	B	9.4		28.3	11.3	
8.8	18	7.3	35.3		9.5		46.4	35.4		9.5		40.2	38 9		9.5		50.5	10.0		9.5		29.1	48.3	
9.5		20.4	32.6		9.5		58.2	31.5		8.7		43.8	46.4	K	9.5		58.8	35.0	B	9.4		47.0	4.8	
9.0		22.2	14.1	K	9.3	30	5.3	19.5	Kb	9.5	42	8.6	14.8		9.5	55	53.2	55.2		9.5		52.6	58.6	
9.5		30.4	24.6		9.5		17.7	37.2		9.5		40.4	43.5		9.4	56	15.1	14.4	B	9.5	9	12.4	52.5	
9.0		34.3	17.0	K	9.3	31	36.6	8.8		8.8		42.0	1.7	K	7.0		24.4	14.5	L	9.5		36.4	15.2	
9.3		50.0	28.8	a	9.4		45.0	24.4		9.5		44.8	8.1		9.5		27.8	1.6		9.1	10	7.8	24.6	b
8.7		53.1	28.3	K	9.4		52.7	38.2		9.5	43	30.7	53.1		9.5		32.7	23.1		9.2		8.8	17.3	
7.2	19	21.6	20.5	K	8.0		56.5	40.9	K	6.5		31.2	41.7	K	9.5		37.1	52.6		9.5		16.7	40.2	B
9.5		28.4	49.3		9.5		57.1	58.3		8.2		43.7	49.3	K	9.5	57	0.1	21.3		9.5		21.4	45.7	
9.5		34.7	24.0		9.3	32	16.4	12.3		9.5		48.2	17.3		9.5		0.6	53.7		9.5	11	7.1	36.5	
9.5		48.9	37.9		9.5		25.2	55.2		9.5	44	2.8	36.7		9.5		11.8	2.7		9.5		16.4	58.6	B
9.3		52.3	9.4		9.5		45.2	18.1		8.9		3.4	28.1	K	9.5		13.4	5.1		9.5		30.6	52.9	B
9.3	20	1.1	57.4	Kb	9.3	33	4.4	48.5		9.5		14.5	49.1		9.5		16.2	12.4		8.5		38.6	54.2	K
9.5		20.9	21.2		9.2		42.7	20.9	K	8.6		21.9	11.4	Kb	9.5		20.3	26.6		9.5		49.1	33.8	
9.5		40.6	20.8		9.2		53.0	20.0	K	9.5		40.6	4.2		9.5		28.7	21.4		9.5	12	4.8	28.0	
9.5		42.5	13.0		9.3		56.8	25.0	K	9.5		42.6	21.3		9.4		32.4	48.7		9.0		6.0	41.5	
7.0	21	0.4	55.6	K	9.3	34	4.0	20.7	K	9.3	45	4.3	34.6	K	9.5		35.1	24.8		9.5		20.7	0.6	
9.5		6.2	19.1		9.5		27.4	43.8		9.3		19.9	22.3	K	9.2		35.6	1.3	K	9.5		24.5	22.5	
9.5		15.7	33.2		9.5		42.5	45.7		9.5		20.6	39.9		8.8		41.1	8.8	Kb	9.2		25.8	43.6	K
9.5		34.0	43.0		9.2		56.0	47.2	K	9.5		23.8	30.7		9.5		48.0	42.7		9.2		29.0	11.2	b
9.4		36.8	16.1		9.0	35	3.1	36.9	K	9.5		24.8	45.6		9.1	58	33.7	10.9	K	9.5		40.1	20.3	
9.5		59.9	26.0		9.4		3.5	11.4		9.5		30.1	53.3		9.5		33.9	15.1		9.1		44.7	54.0	K
8.7	22	0.7	15.9	K	9.4		19.6	37.7		8.2	46	26.7	37.6	K	9.2		35.1	2.6	K	9.5		51.1	43.9	
9.1		43.9	17.0	b	9.4		30.9	19.9		9.4	47	10.8	9.3		9.5		56.1	53.8		9.2		59.8	55.4	K
9.5	23	58.4	31.8		8.8		33.2	7.1		9.5		21.7	28.7		9.5	59	2.4	52.1		8.9	13	29.1	56.5	K
9.2	24	5.7	47.4	b	9.5		46.2	13.9		8.9		24.6	44.7	L	9.4		6.8	15.9		9.5	14	35.1	9.0	
9.5		8.1	53.2		9.2		59.0	37.6		8.8		24.9	12.6		9.4		26.1	38.4		9.5		44.2	5.1	
9.5		16.8	3.6		9.5	36	4.1	32.5		9.5		38.1	43.4		8.1		46.1	39.1	K	9.5		52.4	51.3	
9.5		41.4	37.3		9.5		13.2	9.4		9.5		39.5	14.8		9.5	0	19.1	24.9		9.5	15	16.1	22.0	
9.5		42.4	50.4		9.2		18.3	35.0		9.0		52.8	33.7		9.5		24.4	26.6		9.5		23.1	7.2	
9.5	25	11.2	58.8		9.5		39.4	1.5		9.4		57.9	28.8		*9.5	1	51.7	54.0		9.4		25.3	20.1	
9.2		29.0	5.1		9.4		47.5	23.8		9.5	48	1.3	50.1		9.5	1	26.8	45.9		9.3		27.0	44.3	
9.5		34.4	33.0		9.3		48.3	1.9		9.0		36.6	30.0	K	9.5		36.0	19.0		9.5		28.0	41.7	
9.5		36.2	4.1		9.4	37	0.0	38.6		9.3		45.2	23.0	K	9.5		36.3	11.0		9.5		33.0	41.3	
		+	—				+	—				+	—				+	—				+	—	
10pr.		35.18	1.12		10pr.		35.09	1.29		10pr.		34.99	1.45		10pr.		34.86	1.62		10pr.		34.73	1.79	

1937ᵃ				
9.7	1	16.2	51.7	B

2001—2060

m	8°	+19°	
9.4	15′ 34.6″	53.5′	
9.5	16 0.0	23.0	
9.4	4.7	0.2	
9.0	28.2	37.0	K
9.5	28.7	59.1	
9.2	17 29.0	32.5	
9.1	32.4	14.1	b
8.7	52.4	18.7	L
9.3	18 2.4	59.4	K
9.2	19.0	30.4	
9.4	28.2	1.3	
8.5	41.7	43.6	K
9.5	51.4	58.1	
9.0	53.4	46.0	K
9.5	19 33.1	15.6	
9.2	43.3	5.5	K
9.5	59.4	48.7	
9.5	20 50.1	57.1	
9.5	21 40.7	55.9	
9.5	57.5	20.4	
8.5	22 11.4	24.7	K
9.5	23.0	41.8	
9.4	25.0	9.6	
8.0	42.6	26.5	K
9.5	52.0	41.6	
8.2	23 20.7	56.1	R
7.2	22.6	28.2	K
9.1	33.0	31.1	K
9.1	42.3	37.1	K
9.5	43.6	48.9	
9.2	24 0.0	5.9	K
9.5	4.8	7.3	
8.5	44.5	29.3	
9.2	25 40.1	44.7	b
9.5	49.5	15.8	
9.5	26 12.8	17.6	
9.5	16.0	25.6	
9.5	20.0	8.7	
9.3	49.9	38.7	B
9.5	50.6	40.2	
9.5	59.0	16.7	
var	27 28.0	23.5	B
9.3	28.9	39.7	
9.4	32.2	58.7	
9.0	28 11.5	28.0	R
9.5	15.1	21.1	α
8.5	30.7	23.5	K
9.5	40.0	32.5	
8.5	29 0.0	22.4	K
9.2	8.6	40.1	
9.5	15.0	8.8	
9.2	20.6	38.3	
7.2	28.0	46.9	L
9.5	29.1	10.2	
9.3	37.4	11.4	
9.3	30 12.0	58.2	αB
9.5	19.2	8.9	
9.5	35.4	42.3	
9.5	37.0	55.4	
9.0	51.8	27.0	
	+	−	
10pr.	34.54	1.96	

2061—2120

m	8°	+19°	
9.5	31′ 5.7″	58.3′	
9.5	6.0	15.5	
9.5	18.0	23.7	
8.0	25.9	47.0	B
8.5	26.1	3.8	
9.1	39.7	42.7	αB
9.3	41.0	27.2	
9.3	43.7	30.5	B
7.0	32 1.3	51.6	B
9.5	6.2	9.3	
9.5	12.0	27.4	
9.0	13.4	42.1	
8.2	19.8	43.4	B
9.3	27.1	49.2	
8.9	46.0	0.0	K
9.4	49.5	35.0	B
9.5	52.0	9.2	
8.7	33 0.2	46.4	
9.5	12.0	0.0	
8.9	17.5	39.3	
9.4	26.5	46.3	
9.3	38.0	25.5	R
8.4	47.9	55.3	b
8.0	53.7	26.6	L
9.5	34 26.0	36.6	
9.5	28.0	22.7	
9.2	47.0	57.4	
9.0	50.3	35.6	K
9.4	35 31.1	19.4	
var	38.8	33.2	K
9.4	54.9	1.1	B
9.1	36 28.2	56.5	
9.2	37 1.4	24.9	B
8.5	4.2	24.0	K
7.2	14.8	20.6	K
9.5	21.7	42.8	
8.2	29.0	34.3	K
9.5	40.1	16.5	
9.3	48.3	49.1	K
9.1	54.1	46.7	
8.7	38 17.0	16.8	
9.4	22.3	44.6	
9.3	39 32.0	4.8	
9.4	46.4	12.9	
9.2	52.2	8.0	K
9.5	40 1.8	16.9	
9.5	3.3	2.7	
9.5	48.0	47.7	
8.8	41 58.4	49.0	K
6.5	42 30.4	22.8	K
9.5	43 11.6	19.6	B
9.5	27.3	1.4	
8.7	48.0	26.6	Kb
8.3	44 3.7	53.6	K
9.5	24.1	37.8	
9.4	33.3	6.9	
9.5	39.0	35.3	
9.2	45 0.0	40.1	
8.2	5.7	51.7	K
8.7	39.0	21.4	K
	+	−	
10pr.	34.41	2.10	

2121—2180

m	8°—9°	+19°	
9.5	46′ 28.1″	59.6′	
9.4	47 1.0	53.5	
9.5	12.0	55.4	
9.5	29.4	34.4	
9.4	53.3	4.4	
9.5	48 16.1	27.5	
9.5	22.1	20.6	
9.5	54.0	9.0	
9.5	56.5	28.0	
9.5	49 36.3	16.9	
8.5	40.7	50.4	K
9.1	50 0.3	38.7	K
9.5	20.0	14.0	
9.4	30.7	7.9	B
9.1	35.6	32.7	K
*9.5	51 33.4	7.8	
9.5	39.9	4.5	αB
9.4	52 3.1	29.7	
8.5	53 13.1	36.2	K
9.5	44.3	54.6	B
9.2	46.3	10.9	b
9.2	54 13.1	17.0	
8.9	51.1	43.9	K
9.5	55 13.6	23.6	
8.8	19.2	55.7	K
9.5	25.3	4.8	
8.5	40.6	15.3	Kb
9.5	54 0	49.8	
9.3	56 7.9	57.5	
8.6	57 9.6	32.5	K
9.1	11.4	51.8	K
8.7	13.4	19.1	K
8.0	14.9	59.8	Kb
9.5	23.6	37.1	αB
9.5	43.6	19.5	
9.2	53.3	38.7	
9.2	54.1	46.3	K
9.4	58 2.4	58.6	
9.0	14.4	59.9	K
9.5	40.0	33.3	
9.5	45.6	19.4	
9.5	53.1	13.2	
9.3	59 40.0	44.2	K
9.5	54.6	16.0	
9.5	0 23.0	46.4	
9.5	23.3	6.2	
9.5	1 3.0	56.5	
9.2	23.8	36.3	K
9.5	48.1	45.1	
8.7	48.3	32.5	Kb
8.2	2 42.1	28.7	K
9.4	3 5.5	7.8	
9.5	29.2	7.4	
9.1	4 14.1	16.0	K
8.9	33.6	50.4	K
9.2	5 20.1	43.4	K
9.5	25.2	4.2	
9.5	6 6.1	30.0	
9.5	7.6	43.8	
9.4	12.1	10.8	b
	+	−	
10pr.	34.11	2.33	

2135α

9.6	51 17.7	57.2	B

2181—2240

m	9°	+19°	
9.2	6′ 17.1″	20.1′	K
9.0	21.1	12.6	K
9.5	24.2	33.8	
9.3	7 6.1	29.0	
8.4	36.6	50.8	K
8.5	40 9	22.9	K
7.0	8 19.1	24.9	Kb
9.0	25.0	51.1	K
9.5	46.3	57.1	
9.5	9 9.6	12.9	
9.5	20.2	47.3	
9.5	27.7	59.3	
9.5	34.5	7.4	
8.0	10 7.1	23.5	K
9.5	22.6	21.1	
9.5	58.1	45.2	
9.4	12 25.0	29.7	
7.5	28.2	44.0	L
9.5	31.6	19.4	
9.5	13 37.5	4.0	
7.5	38.4	21.7	K
9.5	14 25.7	42.6	
9.1	15 2.8	33.8	b
9.2	49.9	35.4	
9.5	16 20.5	40.8	
9.5	44.2	54.9	B
9.5	49.1	33.8	
9.2	52.1	25.6	
8.8	54.8	21.9	
9.5	17 16.6	40.1	B
9.5	39.0	45.6	
8.3	54.7	31.1	K
9.5	55.2	51.7	
9.5	56.5	48.0	
7.5	18 26.6	42.1	K
9.5	20 13.7	24.4	
9.5	47.9	4.3	
8.3	51.7	54.3	K
9.0	21 41.7	43.8	B
9.5	22 21.8	56.3	
~~9.5~~	~~40.7~~	~~58.6~~	
9.5	23 23.2	57.2	
9.1	30.4	12.7	b
9.5	24 18.8	2.4	
9.5	28.0	53.8	
9.5	25 19.1	44.4	
8.0	32.5	22.3	K
9.5	26 6.8	55.4	
8.3	21.5	2.6	K
9.5	26.0	32.1	B
8.8	27 21.7	2.1	K
9.3	39.4	14.7	αB
8.7	28 21.0	33.2	L
9.5	34.8	38.9	
9.5	37.9	52.8	B
9.5	29 4.7	7.3	
9.5	15.8	13.9	
9.5	49.4	57.7	
8.8	59.8	17.7	
9.2	31 5.8	21.3	αBb
9.5	34.3	2.8	
	+	−	
10pr.	33.80	2.53	

2241—2300

m	9°	+19°	
9.0	32′ 41.7″	2.5′	
9.1	33 29.5	36.0	K
9.1	34 8.5	31.8	K
9.1	17.5	25.9	K
9.5	31.8	33.9	
9.5	32.2	27.4	
9.5	51.0	58.6	
9.3	35 33.1	54.9	
9.3	52.8	39.5	αB
9.2	36 10.5	30.9	K
6.5	25.8	31.6	K
8.3	30.5	39.9	K
9.2	37 13.0	58.8	
7.0	48.1	20.8	K
9.5	38 14.8	27.4	
9.0	27.5	22.5	K
9.5	39 6.2	13.4	
9.5	37.4	21.6	B
9.2	40 2.1	27.6	
9.3	9.0	48.1	B
8.4	24.2	27.8	K
8.8	29.7	59.2	K
9.5	38.6	17.7	
9.5	42.6	12.4	B
8.3	41 13.2	19.8	K
8.3	22.2	10.8	K
8.3	28.7	18.7	K
9.5	33.9	30.4	B
9.5	42.8	10.7	
8.3	42 48.7	59.5	K
9.3	53.4	58.2	Kb
9.5	43 3.5	28.1	
9.5	6.0	6.0	
9.5	16.8	3.9	
8.6	34.3	4.3	L
9.0	55.8	59.5	K
9.5	44 8.8	45.4	
8.9	35.8	59.5	K
8.0	45 41.3	36.7	K
~~9.5~~	~~40.7~~	~~58.6~~	
9.0	46 45.5	30.9	
9.4	47 23.1	20.5	
8.0	33.2	29.8	Lb
8.0	49 20.4	58.8	B
9.4	22.5	26.5	Bb
9.5	48.0	5.3	
9.5	51 3.9	41.9	
9.5	53 7.0	6.3	
9.1	36.3	42.0	B
9.3	39.2	16.4	b
9.1	39.4	55.1	K
9.5	52.8	34.3	
8.2	54 23.2	50.2	K
9.5	54.2	25.0	
9.5	55 18.4	59.1	
9.5	38.7	58.1	
7.7	54.5	38.5	K
8.3	58 10.8	9.4	K
9.1	39.5	20.5	K
9.5	41.4	57.0	
	+	−	
10pr.	33.39	2.76	

2301—2360

	9ʰ—10ʰ	+19°	
m	′ ″	′	
9.3	58 53.2	35.4	
9.5	59 14.5	34.3	
8.5	14.5	18.4	K
*7.9	52.6	13.6	K
8.3	0 15.5	27.7	B
9.2	53.3	10.4	
7.5	1 10.5	14.2	Kb
8.8	2 7.2	11.1	
8.8	34.8	37.4	K
9.1	3 4.1	16.6	K
8.2	40.7	2.5	K
8.5	4 0.0	38.8	
9.1	3.8	12.7	B
9.5	11.9	1.1	
9.5	17.4	40.9	
9.2	26.3	23.1	B
8.9	37.5	36.0	K
9.1	6 0.2	35.0	
9.5	36.5	2.9	
9.5	44.2	7.0	
8.8	7 2.4	48.5	K
8.1	12.0	49.6	K
9.0	39.1	57.9	
9.5	8 12.5	5.2	
9.5	21.2	46.0	
9.5	9 20.1	20.7	B
9.4	36.8	30.1	
9.2	10 22.2	41.6	Kb
9.5	41.1	5.0	
9.4	11 16.5	33.2	
9.5	12 50.0	22.8	
9.4	13 29.3	26.4	Rb
9.5	47.6	42.6	
9.5	14 27.6	16.1	
7.7	15 4.9	51.2	K
9.5	16 10.2	2.8	
9.3	18.3	15.8	
9.2	17 37.6	29.1	aBb
9.4	39.5	51.0	
9.5	18 8.3	9.0	
9.1	11.3	5.5	b
9.3	59.0	45.0	aB
9.5	19 0.4	44.9	aB
9.5	4.3	54.1	aB
8.6	20 6.6	19.4	Kb
8.5	26.0	39.9	L
9.5	34.1	53.7	
9.5	56.6	44.0	
9.2	21 13.3	40.6	K
9.3	22 25.0	5.1	
9.5	34.6	15.5	
9.0	54.3	23.4	K
9.5	23 15.3	8.9	
9.4	26 19.1	1.2	b
8.3	28 20.6	24.4	L
9.1	31.0	41.0	b
9.5	39.3	2.4	
9.5	29 38.3	16.1	
8.3	47.3	6.8	L
9.5	30 25.6	46.0	
	+	—	
10pr.	32.87	2.97	

2361—2420

	10ʰ	+19°	
m	′ ″	′	
9.5	30 25.6	31.3	
9.5	31 37.0	28.8	
8.2	32 13.5	59.9	Kb
8.4	33 11.0	36.7	B
8.2	34 12.3	10.3	B
7.5	35 4.3	8.8	K
9.5	38.6	55.5	
6.7	36 1.5	4.7	K
9.5	37 10.0	33.3	
9.3	13.0	18.2	K
5.6	38 35.1	39.5	K
9.0	39 32.3	3.5	K
8.1	53.6	44.0	K
9.3	58.8	45.1	K
9.4	40 50.0	13.4	
9.4	41 17.7	46.7	aB
9.4	49.6	23.0	
9.5	42 13.4	3.6	
9.4	17.8	29.8	
9.5	38.6	20.9	
9.4	59.6	45.3	aB
9.4	43 13.3	27.1	
9.3	21.9	31.9	Kb
9.2	30.3	43.0	a
9.1	39.6	56.4	K
9.5	57.3	49.5	
8.5	44 6.0	28.9	K
9.4	13.0	27.0	B
9.3	45 9.1	3.1	
9.5	46 14.0	54.6	aB
9.3	47 13.3	26.4	
8.5	44.8	18.9	R
9.5	48 20.3	30.6	
8.7	25.0	36.7	L
9.3	45.6	59.8	
9.0	49 2.5	43.7	K
9.5	50 18.0	19.9	
8.8	50.6	22.6	
9.5	59.0	54.8	
9.3	51 6.0	20.8	
8.7	17.5	51.7	
9.2	59.3	23.3	aB
9.5	53 7.3	11.3	
9.5	26.0	23.4	
9.3	54 0.3	55.2	
9.2	2.0	49.3	b
9.3	59.3	19.2	
9.0	55 4.8	7.4	
9.5	38.0	35.8	
9.3	44.1	15.2	
9.5	55.8	29.6	
9.0	57 4.0	36.4	K
9.5	29.1	8.3	
9.5	59.6	18.5	
8.3	58 1.5	37.6	K
9.5	3.5	41.4	
9.3	28.6	35.4	K
9.5	51.3	43.7	
8.7	59 6.0	54.8	
8.5	50.8	29.2	K
	+	—	
10pr.	32.21	3.17	

2421—2480

	11ʰ	+19°	
m	′ ″	′	
8.8	1 1.6	28.2	
9.5	17.7	1.8	
9.5	37.6	49.7	
9.3	2 39.5	59.4	K
8.6	3 14.6	9.9	L
8.1	59.9	29.5	Lb
9.5	4 11.6	48.2	
9.5	42.6	32.6	
8.3	58.6	40.6	L
9.5	5 0.2	43.3	
9.2	29.8	52.2	
8.5	6 7.3	23.7	
9.3	29.6	34.4	
9.5	42.7	26.1	
9.5	8 18.8	56.1	
8.5	51.6	25.1	K
8.7	52.1	38.5	K
8.0	12 12.0	52.9	K
9.5	24.6	43.3	
9.5	27.1	7.5	
9.5	48.6	29.3	
9.5	13 37.8	1.0	
8.2	14 14.9	0.2	K
9.4	15 7.1	9.0	B
9.5	46.3	35.0	
8.3	47.5	50.7	K
9.5	50.9	4.1	
9.4	16 16.1	59.4	B
9.5	24.0	51.0	
9.5	55.3	40.8	
9.2	17 6.0	31.6	
9.5	23.9	0.6	
9.4	18 11.5	9 2	
9.5	47.6	15.4	
9.1	19 36.8	56.1	b
9.1	43.3	31.9	K
9.5	21 19.0	11.3	
9.4	43.4	59.8	
5.7	22 55.9	12.6	Kb
9.3	23 8.1	28.4	
9.4	18.2	1.8	
9.0	19.4	44.1	
9.0	29.2	39.4	R
9.5	24 22.7	21.1	
9.5	41.1	58.3	
9.5	45.2	46.3	
9.5	25 27.8	1.0	
8.5	38.4	37.3	K
9.3	43.5	58.8	B
9.3	26 10.3	21.4	R
9.2	48.6	59.6	
9.1	27 3.7	29.8	b
9.5	15.7	14.2	
9.5	50.3	7.3	B
9.5	28 25.7	7.3	
9.5	52.1	46.4	
9.0	54.2	23.7	B
9.5	29 3.3	21.9	B
8.5	10.1	14.4	K
9.5	11.6	29.4	
	+	—	
10pr.	31.60	3.28	

2481—2540

	11ʰ—12ʰ	+19°	
m	′ ″	′	
9.3	29 47.1	8.3	
8.8	32 3.1	48.3	L
7.5	5.1	47.9	L
9.3	37.7	14.5	
9.0	59.8	9.7	K
9.5	33 25.7	43.9	
9.3	34 35.1	8.2	
9.0	43.0	26.2	
9.5	59.0	42.9	
9.3	35 6.9	12.8	K
8.8	7.7	33.9	K
7.0	13.6	3.1	K
9.5	53.0	39.8	
8.5	57.5	3.6	K
8 8	36 16.4	20.1	
8.6	33.9	58.2	
9.2	37 29.4	51.5	Kb
9.3	38 36.1	18.0	
8.7	47.4	29.7	K
9.2	39 34.4	51.3	K
9.3	40 25.3	51.5	
9.2	56.5	0.2	
7.8	41 24.3	38.8	B
8.8	28.7	33.9	
8.5	58.8	3.2	K
8.0	42 11.7	44.6	K
9.2	23.7	44.6	K
9.5	53.6	27.6	
8.9	43 22.0	27.0	
8.5	35.4	39.7	K
8.0	44 40.5	34.2	K
8.5	57.7	46.0	K
9.5	45 51.7	51.6	
8.9	46 16.7	34.9	K
9.3	47.8	23.3	
8.8	56.7	43.6	K
9.5	47 9.1	56 0	
9.3	48 24.3	42.9	b
8.8	49 58.1	10.9	K
*9.5	52 52.3	35.2	
7.9	53 12.9	8.0	Kb
9.1	54 1.7	59.1	K
9.4	55 5.6	57.9	
8.8	9.1	20.4	R
9.1	14.5	38.3	b
7.5	56 38.3	38.1	K
var	49.0	35.1	K
9.4	57 11.5	16.7	
9.3	58 8.1	23.6	
8.2	58.9	0.0	K
8.8	0 26.3	45.7	B
9.3	1 20.8	49.8	
9.3	31.7	6.5	
9.4	41.4	7.5	
9.3	2 41.7	20.0	
9.1	43.2	46.7	
8.9	50.4	46.2	
9.5	3 24.7	30.0	
7.8	39.7	26.2	K
9.1	4 1.0	30.1	
	+	—	
10pr.	31.05	3.33	

2541—2600

	12ʰ	+19°	
m	′ ″	′	
8.7	5 25.3	20.7	B
8.7	35.0	46.4	B
9.0	6 30.3	11.0	B
9.5	9 27.0	26.3	
9.3	36.7	24.9	b
9.3	58.0	43.5	
7.0	10 44.3	14.5	K
9.3	53.3	40.1	
9.0	57.0	49.5	B
8.3	11 3.5	56.5	Kb
9.2	17.3	40.4	
7.8	26.0	58.6	K
9.3	39.0	15.6	
9.3	13 58.7	15.9	
9.1	14 47.5	11.3	Bb
8.8	55.0	23.1	B
9.5	15 12.4	39.5	
9.3	19.0	7.6	
8.8	46.3	56.5	K
9.5	54.0	35.7	
9.1	16 12.7	24.9	
9.4	48.4	41.5	
7.8	17 19.0	29.0	K
9.5	34.4	29.4	
8.5	18 16.7	39.7	K
9.5	37.5	1.0	
9.3	19 0.7	57.4	
8.5	12.0	42.1	K
9.4	20 1.4	12.5	
8.3	38.1	36.2	B
8.0	48.1	8.1	Kb
9.5	50.0	50.2	
9.5	21 27.3	35.0	
9.3	22 16.7	37.4	
9.5	35.7	9.0	
9.4	38.2	1.8	
9.5	23 37.4	14.2	
9.3	24 33.7	11.4	
9.3	34.4	46.7	b
9.3	25 24.7	12.7	b
9.5	26 16.0	39.7	
9.5	27 2.0	54.0	
9.3	45.4	25.2	
4.3	52.2	10.6	K
9.3	28 28.3	23.6	
9.5	40.0	48.5	
9.5	29 21.5	59.4	
9.0	31.0	23.2	B
9.0	36.1	35.8	B
8.4	30 23.6	25.9	K
9.2	35.0	41.1	
9.1	33 4.7	7.7	b
9.0	8.0	35.6	B
8.0	34 10.0	52.6	K
9.0	25.6	7.9	Kb
8.7	35 7.4	3.9	K
9.5	15.7	22.8	
9.5	19.0	4.2	
8.5	27.0	31.8	Kb
8.8	38 2.4	4.6	K
	+	—	
10pr.	30.30	3.33	

2303 a
9.7 | 59 28.2 | 58.7 | B

2519 a
9.5 | 51 31.7 | 43.3 |

47

2601—2660					2661—2720					2721—2780					2781—2840					2841—2900				
	12°—13°		+19°			13°		+19°			13°—14°		+19°			14°		+19°			14°		+19°	
m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.4	38	5.9	57.4		9.5	11	32.9	1.8		9.4	44	1.8	10.5		9.4	9	36.1	36.3		8.5	34	28.6	33.1	K
9.3		11.3	51.8		9.5	13	59.0	46.8		8.5		20.8	37.5	K	9.5	10	5.8	30.6		8.1		51.6	6.4	K
9.5		14.3	50.7		9.2	15	14.3	37.9	b	9.2		34.4	31.2	K	9.5		6.7	1.6		9.0		52.8	5.6	K
8.5		17.6	17.3		9.5		51.1	43.1		9.5	45	13.4	23.0		9.4		10.3	21.7	aB	7.5	35	8.0	6.8	K
8.8		36.0	37.1		7.8	16	0.2	2.5	K	3.2	47	48.0	7.7	K	9.4		40.3	30.6	B	9.2		9.8	25.4	
9.2		48.0	49.2	Kb	8.8		41.8	7.6	K	9.4		53.5	6.5		8.8	11	5.9	7.3	K	9.5		25.3	21.5	
7.4	40	37.7	49.4	K	8.2		43.0	50.1	K	9.5	48	10.9	19.5		8.8		12.9	19.9	Kb	9.5		39.0	39.1	
7.0		48.0	37.4	K	8.7		47.5	8.0	K	7.9		23.3	24.3	K	9.5		16.0	42.0		9.3	36	25.8	34.5	
9.5	42	17.5	58.4		9.3	17	25.6	1.8		9.5		39.4	25.7		8.9		44.7	37.8	K	9.3		48.8	28.2	
8.6		35.5	8.1	K	8.4		27.1	26.2	Kb	9.2	49	23.5	0.5		9.5		58.2	26.5		7.4	37	29.7	5.5	Kb
9.4		45.0	3.0		9.5		37.0	3.7		9.3	50	1.9	39.3		9.5	12	8.3	10.6		8.9		38.4	47.8	K
7.0	44	2.6	57.7	K	8.5	18	41.3	23.0	Kb	9.5		30.9	56.2		9.3		13.2	47.5		9.2	38	24.4	14.8	K
6.8		45.6	56.8	K	9.5	19	36.4	31.6		9.5		55.8	49.3		7.3		17.0	44 1	K	9.5		38.6	53.9	
7.5	46	37.5	51.6	K	9.1		54.9	6.0		9.5	51	2.3	8.4		9.5		31.4	19.2		6.5		39.8	30.4	L
9.3		37.0	0.0	b	9.0	20	9.3	1.8		9.0		22.5	59.3		8.6	13	37.5	54.8	K	9.3		43.6	5.6	
9.3	47	37.0	46.1		9.5		39.9	50.7		8.8		28.3	39.2	K	7.2	14	23.3	50.8	K	9.5		47.3	16.6	
9.1	50	16.5	22.0	K	8.3	21	5.4	2.2	K	9.1		38.9	52.3		9.5		38.4	20.4		8.7		52.0	16.9	K
8.8		24.5	27.7	K	8.3	22	1.8	39.2	K	9.3		43.4	59.0		9.5		54.3	34.9	aB	9.5	39	17.8	42.8	
9.5	51	6.5	34.9		8.8		10.6	23.8		9.0	52	2.8	33.0	K	9.5	15	6.3	51.2		9.4		37.6	57.4	
9.5	52	32.5	51.3		7.2	23	2.0	48.4	K	9.5	53	9.4	11.7		9.5		59.6	43.1		9.5	40	20.7	7.0	B
9.5		52.5	30.1		9.5		36.1	55.0		9.5		16.4	48.5		9.0	16	0.9	4.1	K	9.5		50.0	3.2	
6.5	53	32.8	9.7	L	8.2	24	42.6	44.8	Kb	9.5		17.3	55.2		9.4		3.8	2.4	B	9.4		50.2	20.3	
9.0		37.6	54.2	K	9.5	25	59.4	58.9		9.4		32.3	43.4	a	8.7		36.0	12.8	K	7.5		51.0	39.5	B
9.0		42.0	28.1		9.5	26	10.8	23.0		9.5		53.9	14.7		9.5	17	6.3	43.4		9.0	41	31.4	16.6	
9.1	54	15.0	20.1		9.5		27.9	21.0		9.1	54	41.0	32.1	aB	9.5		7.8	33.2		9.4		51.4	27.9	
9.5		18.0	22.9		9.0		41.4	19.2		9.3		41.4	11.2		9.2	19	1.3	4.2	B	8.5	42	22.3	57.2	K
9.0		32.0	21.9	K	9.3	27	5.9	5.2		9.5		46.2	38.3	aB	8.7		27.5	52.3	K	9.5	43	15.3	14.0	aB
8.7		53.2	24.6	K	8.0		12.8	10.6	K	9.4	55	8.7	35.5	aB	9.5		36.6	24,2		9.3	44	22.3	19.8	
9.5	55	19.0	30.1	a	9.4	28	54.5	43.2		9.5		16.6	31.9	aB	9.0		39.0	57.9		8.0		35.1	14.8	K
9.5		28.4	1.2		9.5	29	13.3	8.2		8.0		43.6	50.3	K	6.4		43.3	52.8	Kb	5.0		42.2	42.7	K
9.3	56	4.0	10.9	R	9.1	31	1.3	48.9	R	9.5	57	14.4	43.9		9.0	20	7.3	33.8	K	9.3		58.3	35.7	
9.5		14.7	0.8		8.6		1.6	54.5	K	7.9		44.1	52.4	K	9.5		28.7	30.0		8.9		58.9	47.4	
9.5		36.1	8.9		9.2		3.1	40.3		9.5		55.4	45.5		9.3	22	33.9	1.6		8.5	45	2.4	41.2	K
9.0	57	47.2	42.0	K	9.4		18.0	12.7		9.5	59	33.4	33.7		9.1		54.5	39.1	b	8.1		49.5	19.7	K
9.5	58	7.4	3.8		9.4		23.0	9.3		9.0		47.9	10.2		9.5	23	18.9	42.5		8.5		59.8	40.7	K
9.2		17.5	21.9	K	9.2		27.0	4.5		9.3	0	33.7	56.3		9.5	24	27.5	14.6		9.4		59.9	2.7	
9.1		18.3	32.9		6.5	32	4.8	0.8	K	9.5	1	4.4	32.6		8.2	25	14.3	24.0	K	9.4	46	5.3	37.9	K
8.3		36.5	19.4	K	9.1		10.3	25.4	aB	9.2		37.2	32.8	b	7.5		22.4	29.3	K	9.5		11.7	28.0	
9.5	59	22.6	2.1		9.5		13.5	58.3		9.2	2	17.4	16.7		9.5	26	22.4	1.0		9.5		33.0	7.0	B
9.0	1	0.5	20.1		9.2	33	13.4	11.3		8.1		54.0	1.7	K	9.5		27.3	40.1		9.4		41.0	9.1	
8.7		38.0	21.8	K	8.8		36.9	20.3	K	9.5	3	6.6	24.7		9.5	27	14.5	35.9		6.3		50.2	44.9	K
7.5		59.5	23.6	K	9.4		40.2	11.6	aB	9.0		14.7	28.9		9.5	28	23.6	3.5		9.5		50.8	14.2	
9.5	2	19.5	13.1		8.0		44.3	56.8	K	8.7	4	7.0	47.8	K	9.1		25.0	28.1	b	8.8	47	18.2	6.4	K
9.5		19.5	17.9		8.8	34	42.1	59.3	B	9.5	5	7.8	47.8		8.1		32.5	50.9	K	9.5		52.0	46.7	
9.4	3	57.5	46.1		9.2	35	9.3	13.8	K	8.4		10.5	37.1	K	9.5		33.0	15.3		9.5		59.7	43.3	
9.3	4	38.7	9.1		9.5		29.7	47.0		9.0		16.5	43.8	K	9.4		42.3	59.2		9.5	49	48.3	34.1	
8.4	5	15.0	29.4	K	9.5	36	2.3	39.6	aB	9.4	6	1.4	0.8		8.2		43.8	53.3	K	9.2	50	8.0	8.4	
6.5		31.5	31.2	K	9.2		21.2	58.0	K	9.4		56.9	51.6		9.5	29	34.0	10.8		9.2		16.3	43.8	L
6.3	6	9.9	29.1	K	9.5		27.3	54.4		8.5	7	37.9	39.3	K	9.2	30	46.8	7.0		9.4		39.1	13.9	
9.5		23.0	39.0		7.7	38	10.2	5.5	Kb	9.3		37.9	6.2		9.5		57.2	58.0	aB	9.5		40.9	2.6	B
9.5		45.5	40.2		8.9		47.8	4.2	K	9.0		46.8	9.9		9.5	31	34.1	41.5		6.8	51	7.2	34.4	K
9.5	7	20.9	44.4		9.5		49.3	9.4		8.9		48.2	14.6		9.4		42.2	39.1	aB	9.2		18.3	15.7	K
9.2	8	1.3	45.6		9.3	39	53.1	40.7		9.5		53.1	48.8		9.5	32	6.6	26.7		9.2	52	9.3	52.9	K
7.0		6.9	40.2	K	9.5	40	19.7	21.8		9.1	8	4.7	17.5		9.5		9.9	32.8		9.5		20.5	40.6	
7.1	9	12.3	49.7	K	8.6		22.7	47.1	K	9.1		29.9	15.0		9.4		28.3	39.0		9.5		27.3	4.9	aB
8.7		22.9	43.7	K	7.8	41	2.8	40.2	K	9.1		49.7	16.8		9.5	33	2.0	45.2		9.5		45.9	28.1	
7.2		33.8	39.7	K	9.4	42	43.0	6.2	aB	1.0	9	3.0	56.4	K	9.0		5.8	13.3		9.5	53	4.3	9.8	
8.2	10	32.2	59.7	K	9.0	43	2.4	32.2		9.0		9.3	43.7	K	8.2	34	9.2	21.9	L	9.5		39.7	0.7	
8.4		33.4	47.5	K	7.2		13.3	20.9	K	6.7		16.2	36.0	K	9.1		11.1	43.3		8.8		43.7	16.9	K
9.5	11	1.9	8.8		9.5		49.9	13.3		9.3		26.2	47 7		9.0		18.6	34.3	K	9.5		58.6	39.0	
		+	—				+	—				+	—				+	—				+	—	
10pr.		29.57	3.24		10pr.		28.91	3.09		10pr.		28.41	2.91		10pr.		28.00	2.74		10pr.		27.60	2.51	

2768 a
var | 7 18 | 44.7|

19·5 2·6.0 12.1 2 32 11.2

2901—2960 14ᵘ—15ᵘ +19°				2961—3020 15ᵘ +19°				3021—3080 15ᵘ—16ᵘ +19°				3081—3140 16ᵘ +19°				3141—3200 16ᵘ +19°			
m	′	″	′																
9.5	54	48.8	30.6	7.1	16	14.8	27.4	K	9.5	42	42.6	31.0		9.2	12	57.1	24.3	b	9.1	33	48.6	50.8	K
9.3		53.3	48.1	9.5	17	35.4	28.7		9.0		52.8	0.2	K	9.5	13	45.4	51.2		8.9		53.5	12.4	R
9.5	55	0.3	55.5	9.4	18	3.4	14.0		8.1	44	25.6	37.4	Kb	9.0	14	37.9	42.9		9.5	34	37.1	51.2	
9.5		0.8	29.3	9.0		28.9	45.6	B	8.5	45	5.3	43.6	K	9.5	15	25.9	3.8		9.1		56.6	30.3	K
9.3		6.0	46.5	9.4	19	6.3	59.9	B	9.3		31.9	14.0		9.3		29.0	29.6	K	9.2	35	9.5	29.2	K
9.5		10.5	26.8	6.8		22.4	59.9	K	9.4		32.9	19.8		3.0		31.1	30.3	K	7.0		10.7	12.9	Kb
9.5		20.3	37.5	8.9		28.4	19.8		9.3		56.6	41.2		9.5	16	8.3	30.5		9.5	37	4.7	51.5	
9.4		25.9	58.2	9.5	20	58.4	45.7		9.1	46	33.0	0.6	K	9.5		15.0	58.5		9.5		19.9	1.3	
9.5		33.7	13.9	9.5	21	49.9	18.5		9.1		39.2	2.1	B	7.8		42.5	51.3	K	8.7		43.1	27.1	K
8.4		42.6	57.7	K	9.5	22	25.9	49.3		9.5		49.6	57.4		9.2		48 6	23.4		9.5		50.6	41.2	
9.5	56	9.0	19.5	a	9.5		59.5	59.7		8.3	47	3.7	9.5	L	8.8	17	35.1	31.5	Kb	9.5	38	41.2	48.0	
8.2		27.1	40.1	K	7.2	23	16.7	0.5	Kb	8.5		31.6	12.6	K	7.7		39.6	58.1	L	9.0		46.1	33.3	
9.5		33.2	6.9		8.2		37.3	32.6	K	8.7		39.6	51.0	K	9.5		45.8	40.3	a	8.9		58.6	47.6	Kb
9.5		50.2	1.4		9.5	24	57.2	17.5	B	9.0		40.7	43.0	B	8.3	18	15.6	50.0	K	8.0	39	25.7	55.2	K
9.5	58	4.3	48.4	9.3	25	2.1	44.3	B	9.5	48	23.3	14.0		9.5		39.1	13.7	B	9.5		27.1	23.1	
9.5		16.2	4.1	9.3		7.2	39.1	Kb	6.2	49	9.8	3.1	K	7.0		52.8	34.9	K	9.5		37.0	38.9	
9.5		39.4	33.1	9.5	26	7.6	33.3		9.5		22.9	25.7	K	9.1	19	12.0	16.1	K	9.5		40.6	52.2	
9.1		49.6	9.8	b	9.5		10.2	6.5		8.8		51.9	51.6	K	var		24.1	12.7	K	9.5		57.2	52.2	
9.5	59	3.8	24.5		8.2		24.0	4.5	K	9.5	50	9.9	9.9		9.5		50.0	4.2		9.2	40	46.1	52.3	b
9.5		34.2	52.7		9.2		35.4	21.7	K	9.5		53.5	2.8		8.7	20	7.8	48.9	R	9.5	41	37.8	29.2	
9.4		36.4	31.3		9.3	27	4.9	3.3		9.5	51	9.7	58.0		8.5		40.7	42.3		8.4		39.6	22.0	
9.5		42.6	27.8		9.5		10.6	32.2		8.7		19.3	48.5	K	7.6		49.8	19.9	K	9 5	42	12.2	58.4	B
9.4	0	27.7	29.9		9.5		29.5	11.9		9.5		24.0	57.0		8.6	21	1.3	51.0		9.4		17.1	52.7	
6.1		41.1	1.0	K	9.5		38.9	20.2		9.3	52	33.5	2.8		9.5		55.2	39.6		9.5		24.7	3.6	
9.5	1	27.8	8.0		9.5		58.5	3.4		9.5		49.3	30.9		9.1		57.8	34.4	K	9.5		38.9	53.1	
8.2		36.5	26.1	K	9.5	28	38.3	34.9		8.8		50.4	52.0	K	9.5	22	13.3	16.7		7.8		53.6	32.9	K
9.1		37.1	33.2		9.4	29	35.9	30.9		9.5	54	25.6	50.2		7.0		14.1	19.9	K	9.5	43	14.8	42.5	
9.4		42.6	45.7		8.5		48.4	18.8	K	9.0		26.3	42.9	K	9.3		22.0	24.2	K	9.4		18.4	48.5	
8.0	2	17.4	36.6	K	9.2		55.1	3.1		9.1		45.2	46.7	K	9.5	23	3.3	48.8		9.4		27.3	23.9	B
8.2	3	49.7	32.5	K	8.7		57.9	38.0	K	9.4	58	9.3	19.2	b	9.5		54.1	50.2		9.5		29.1	14.2	B
9.0	4	11.6	55.0	K	9.5	30	35.3	3.3		9.5		22.0	1.9		9.5	24	50.6	48.8		9.4		33.3	20.9	
8.5		39.2	9.2	K	9.5	31	2.6	36.8		9.5	59	10.3	55.4		8.7		56.0	35.1	K	9.5		34.4	8.9	
8.4		53.3	59.5	K	9.0		18.6	29.2	K	8.8		46.9	33.0	K	9.3	25	13.0	36.3		9.5		40.6	54.4	
9.1	5	13.3	56.7	K	9.5		26.1	7.5		9.5		51.5	6.1		9.4		18.5	13.9		8.6		43.5	9.0	K
5.9		28.2	31.5	K	9.0	32	12.3	28.0		9.5		52.0	2.7		9.2		20.7	36.7	K	8.5		44.9	36.4	K
9.5		54.3	7.0		9.3	33	7.2	23.6	B	9.0	1	10.9	13.3		9.5	26	22.0	53.9		9.5		50.1	39.9	
7.4	6	10.8	38.4	K	9.5		8.8	26.4		8.9	2	2.2	23.0	Kb	8.9		35.5	2.3	K	9.0	44	37.4	0.5	
9.5		13.7	58.5		9.5		38.4	57.1		9.0		16.6	3.1	K	9.5		56.2	15.8	B	8.0	45	1.3	34.3	K
6.7		15.2	49.7	K	9.2		55.4	6.5	K	8.5		43.9	59.7		9.4	27	11.6	2.8		9.0		4.6	17.5	
8.8	8	12.8	15.3	K	7.5		56.8	8.9	K	9.5	4	4.3	50.5		9.3		12.5	10.1	R	9.5		13.1	59.3	
9.4	9	5.5	54.8		9.0	34	28.0	1.9	K	9.1		14.9	45.0	b	9.4		15.7	54.3	B	9.5	46	34.1	16.1	
9.3		28.8	43.1	a	8.7		51.3	37.3	K	9.3		15.8	41.3		9.2		34.3	18.9	R	9.5		45.2	34.6	
9.0		35.0	41.7	L	8.9	35	37.1	50.1	K	9.2		16.7	58.5		9.4		36.1	31.4	K	9.5	47	43.6	27.1	
9.2		45.1	51.2		9.2	36	15.0	28.1	K	9.2		22.2	3.6		9.5		49.3	39.0		9.5	48	0.7	33.6	
8.2		51.9	42.0	L	9.4		25.3	28.1		9.5	5	0.1	23.4		9.5	28	0.0	47.0		9.5		7.9	55.8	
9.5	10	51.3	38.1		9.5		27.4	19.9		9.3		3.7	12.0		9.5		49.0	23.4	R	8.8		9.6	20.3	K
9.5	11	40.6	33.2		9.3	37	6.3	6.9		9.0		44.2	41.9		8.1	29	3.1	14.8	K	9.5		12.4	33.3	
8.8		43.0	23.5		9.4		20.9	18.5		9.5		51.1	56.7	B	9.4		7.8	49.6		9.5		18.6	21.3	
9.2		57.4	21.0		9.5		49.0	22.9		9.5		56.9	9.6		9.4		10.3	42.6		9.5		31.5	31.2	
9.5	12	12.6	55.3		9.0	38	56.4	45.6		9.0	6	6.3	14.0		9.5		38.6	45.2	Rb	9.5		44.7	41.1	
9.1		24.7	57.5	b	9.5	39	7.6	51.2		9.0		12.2	35.5	B	9.5		40.5	21.8		9.5		59.1	28.4	
9.5		34.1	22.1		9.3		9.3	57.7	K	6.8		26.9	28.2	L	9.5	30	15.1	42.2		9.5	49	9.3	26.1	
9.5	13	2.6	51.8		9.4		28.9	10.5		9.5	8	4.4	35.3		9.5		40.4	10.5		9.3		26.1	14.2	
9.5	14	9.9	28.8		9.0	40	18.6	32.5	K	9.5		6.4	41.6		9.4	31	11.0	42.6		9.5		48.4	3.8	
9.1		22.4	17.5	K	9.1		25.9	44.3	K	6.0	9	3.2	11.8	Kb	7.6		22.9	50.9	K	9.2	50	36.2	54.1	K
9.5		26.4	36.4		9.1		53.6	45.0	a	7.8		52.1	52.3	K	9.5		34.5	25.0	R	9.3		43.6	22.6	
9.1		32.2	5.4		8.5		55.3	18.5	K	7.2	10	31.6	12.8	K	9.5		38.6	46.8		9.5		52.6	40.5	
8.5	15	23.4	42.2	K	8.5		55.3	16.2	K	9.5		57.3	7.8		9.5		42.3	43.6		8.7	51	20.5	21.0	L
9.5		42.0	55.7		8.7	41	14.9	45.6	K	9.0	11	3.6	8.8	K	9.5		48.4	0.3		9.5		28.6	26.8	
9.5	16	10.9	37.7		9.3		44.5	52.3	B	9.5		20.8	20.8		8.5	32	16.6	54.6	K	9.5		50.1	9.3	
10pr.		+ 27.31	— 2.32	10pr.		+ 26.96	— 2.03	10pr.		+ 26.64	— 1.69	10pr.		+ 26.39	— 1.35	10pr.		+ 26.25	— 1.09

p. 1900 / 58.4 5.8 p. 1900 / 57.9 4.5

3201—3260					3261—3320					3321—3380					3381—3440					3441—3500				
	16—17ᵃ	+19°				17ᵃ	+19°				17ᵃ	+19°				17ᵃ	+19°				17ᵃ	+19°	
m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′			m	′ ″	′	
8.8	52 8.0	26.1	L		9.5	8 36.9	6.0			9.3	22 26.6	43.3			8.4	30 49.5	24.8			9.5	44 25.5	32.4	
9.3	22.6	57.2			9.5	39.8	38.0			9.5	34.6	22.3			9.3	31 2.4	34.1			8.0	40.5	17.5	K
9.4	28.9	51.2			9.5	40.8	29.6			9.3	48.5	45.7			9.3	3.7	9.0			9.5	45 8.4	47.5	
9.5	40.2	37.1	a		6.8	41.1	52.6	K		9.5	54.0	27.0	B		9.0	10.1	42.6	B		9.1	10.8	4.9	K
9.0	53 21.6	38.1			9.5	9 20.6	57.4			9.5	58.6	58.6			9.5	21.9	19.3			9.4	18.6	52.2	
9.4	24.4	4.6	B		9.4	22.2	39.1	B		9.1	23 2.6	7.6	b		9.0	27.5	2.1	K		9.5	20.5	56.9	
8.1	41.9	48.8	K		9.4	30.6	7.0			9.4	10.3	54.9			9.2	49.0	52.0			9.5	20.7	0.4	
9.5	54 35.6	38.1			9.4	31.3	10.7			8.5	22.6	51.1	K		9.5	55.3	54.0			9.5	31.0	23.4	
9.5	39.7	43.0			9.5	37.1	32.3	B		9.5	55.6	31.9			8.9	32 9.0	22.1			9.5	33.0	20.3	
9.5	40.9	2.0			9.5	10 15.1	48.6			9.5	56.1	15.1			9.3	34.4	47.9			9.5	46 18.8	1.8	
8.8	55 6.9	59.0	K		9.3	16.2	0.7			9.5	24 16.6	35.7			9.4	55.6	4.6			9.0	24.5	41.4	K
9.5	17.1	19.2			9.5	52.6	12.4			9.5	25.7	12.6			9.5	33 13.1	39.4			8.8	43.9	31.1	
9.5	19.2	59.1			9.5	56.4	50.0	B		9.5	29.0	7.5			9.5	16.6	48.5			9.5	46.2	56.8	
9.3	25.2	57.2	K		9.5	11 6.7	49.5	B		9.5	30.3	46.7			9.2	31.5	6.9	K		9.5	51.3	51.6	
8.0	41.1	15.8	K		9.5	20.0	31.3			9.5	54.8	14.8			9.2	42.4	16.9			8.4	51.6	39.9	K
9.5	56 9.6	13.6			9.4	33.2	26.6			8.2	58.2	7.8	B		9.2	59.7	58.7			9.3	58.2	12.4	
7.0	11.9	36.7	K		9.3	58.6	21.7			9.5	59.0	50.8			9.5	34 16.9	13.8			9.1	59.0	4.4	b
6.2	57 34.7	54.3	K		9.5	12 37.6	30.9			6.5	25 2.0	38.1	K		9.5	31.0	38.9			9.2	47 2.6	42.2	B
9.2	58 17.6	37.1			9.5	48.8	50.0			9.5	18.6	17.5			9.2	35 5.1	14.0	aB		9.1	22.0	4.1	
6.0	24.1	48.6	K		9.0	57.7	58.7	B		9.4	35.1	5.0			9.2	7.5	41.4			9.1	29.6	23.1	K
9.5	29.1	47.4			7.3	13 14.6	32.2	K		8.8	36.6	27.8			7.1	13.5	13.3	K		9.1	30.4	45.1	
9.5	59 1.1	34.3			8.5	17.1	25.7	K		8.3	39.6	18.2	K		*9.3	52.9	4.2			8.4	43.7	34.6	K
9.4	10.0	19.3			9.3	33.6	38.9			9.5	42.3	54.5			9.2	54.3	33.4	B		9.0	48 16.2	26.5	
9.4	26.7	12.6	B		9.5	50.6	53.0			9.5	48.6	41.6			7.8	36 4.4	40.7	K		9.5	26.5	44.7	
9.5	36.2	15.8			9.5	52.4	42.6			9.3	26 2.6	19.8			9.5	28.3	49.3			9.5	58.9	39.5	
9.5	36.6	4.2			8.8	53.5	21.6	K		9.5	11.4	43.1			9.1	44.8	0.7			8.0	49 3.4	28.5	L
9.4	45.7	25.6			9.0	14 23.4	56.8	K		9.4	25.6	32.3			9.5	58.2	49.4			9.4	14.7	3.4	
9.5	0 14.1	24.0			9.4	34.8	3.5			7.3	30.9	30.2	K		9.0	37 12.7	37.8	K		9.5	24.0	52.6	
9.4	21.6	52.8			9.5	15 1.6	23.7			8.0	31.6	12.6	K		9.0	14.6	59.4			9.5	27.6	5.2	
9.4	25.8	1.1	B		9.4	2.4	18.2			9.4	46.3	2.0			9.5	16.8	5.3			9.0	45.0	51.3	K
9.5	38.2	0.7	B		8.6	25.3	50.4	K		9.5	51.1	47.7			9.3	34.5	7.7			9.4	50.6	52.8	
9.5	1 11.5	15.0	B		9.1	26.1	20.3	b		8.5	53.5	6.8	B		9.5	39.3	59.2			9.2	51.9	0.2	K
9.4	25.6	8.7			8.0	44.0	54.8	K		9.4	57.6	36.0			9.1	40.5	4.7	K		9.5	53.2	17.0	
9.1	2 0.1	22.1	K		9.5	16 6.6	30.7			5.0	27 5.2	21.8	K		9.5	38 0.2	2.3	B		7.3	50 10.2	54.8	K
9.5	5.4	7.3			9.0	10.1	46.1	L		9.5	8.3	26.6			9.5	2.0	37.8			9.0	38.9	25.8	K
9.3	17.1	40.4	B		9.5	20.0	54.9	B		8.6	14.0	57.5			7.4	14.5	3.9	K		9.4	48.8	2.7	
9.5	17.6	55.4			9.4	30.2	17.5			9.5	42.8	58.6			9.4	15.8	5.4			9.4	51 19.8	22.2	B
9.2	19.7	39.9	B		9.5	33.1	54.4	B		7.5	28 4.0	20.4	K		8.0	43.6	21.1	K		9.1	36.8	7.0	K
9.4	28.6	36.1			9.5	41.5	52.4			9.5	8.2	45.7	B		9.5	47.4	28.3			9.5	54.1	12.9	
9.0	29.1	52.8	L		9.0	45.6	33.3			9.1	14.7	32.4			9.0	39 2.5	59.9			9.3	52 5.9	13.5	
9.5	39.3	47.7			9.1	49.6	47.0			8.0	26.5	13.8	K		9.1	12.2	2.1			9.5	15.2	9.0	
9.1	39.4	3.9	K		9.4	17 3.1	2.7			9.5	45.7	59.1			9.5	16.5	53.5			9.5	23.3	7.1	
9.0	3 4.1	12.3	K		9.4	9.0	40.2			9.3	52.8	21.7			8.3	21.4	47.4	K		9.3	27.2	22.6	B
9.3	35.1	13.1			9.0	21.4	21.7			9.0	57.0	1.9			9.4	43.8	7.4			9.2	37.4	29.6	
9.5	35.6	51.5			9.5	23.2	4.2	B		9.5	29 1.0	7.2			9.5	44.0	14.9			9.0	53 7.3	48.8	
9.5	4 0.3	48.1			9.0	23.6	32.0			9.3	1.5	11.7	B		9.5	48.9	43.8			9.3	17.7	6.0	
9.5	21.6	44.3			8.7	25.7	59.7	L		9.3	7.8	9.5			9.5	40 19.0	20.0			9.4	23.7	7.4	
9.5	35.8	26.2			9.5	45.6	44.7			9.2	13.8	21.4	K		9.1	46.5	46.1			9.5	25.8	1.0	B
9.5	54.8	52.1			9.5	18 5.9	23.4			9.4	19.3	55.6			8.8	49.3	31.0			*9.0	26.5	26.6	
9.0	5 15.1	47 5	Rb		9.2	9.9	58.8			9.4	23.1	54.4	B		9.5	41 23.0	48.1	B		*9.4	28.1	2.3	B
9.4	35.7	9.1	B		8.8	47.6	5.7	K		9.4	31.4	59.1			9.4	36.7	47.6	B		9.3	41.9	7.6	
9.5	50.9	6.2			9.5	19 51.4	25.6			6.6	31.9	56.4	K		8.3	42 1.1	6.5	K		9.3	54 5.4	46.8	
9.5	6 31.8	34.7			9.4	20 32.6	18.9			9.1	39.7	32.0			9.5	4.8	58.4			9.3	10.0	12.7	
9.5	37.9	3.2			9.1	34.9	4.2	Bb		9.5	42.8	48.6			9.5	29.5	4.9			6.5	11.2	31.2	K
9.4	7 11.4	52.0			9.4	46.1	52.8			9.4	43.5	56.5			6.0	30.4	17.9	K		8.5	26.9	38.2	K
8.0	50.9	21.0	K		9.1	21 10.1	48.0			9.5	30 7.6	24.6	B		9.5	55.8	7.2			9.0	43.4	2.0	K
9.5	51.1	4.2			9.5	22 6.8	27.8			9.2	10.5	9.5			9.5	57.0	42.3			9.5	55.0	56.0	
9.2	51.3	29.2	B		9.1	13.6	40.5			9.5	18.3	30.1			9.1	44 10.2	14.5			9.3	56.7	41.8	
9.5	8 17.1	15.2			8.7	21.6	45.4	K		9.5	30.1	1.0			9.4	11.4	23.2			9.5	55 15.0	24.8	
9.5	29.0	42.3			8.8	22.7	59.6			9.3	42.6	42.1	B		9.4	15.9	48.4			9.5	38.9	2.4	
	+	—				+	—				+	—				+	—				+	—	
10pr.	26.15	0.86			10pr.	26.08	0.66			10pr.	26.03	0.48			10pr.	26.01	0.33			10pr.	25.99	0.15	

3401 a					
9.6	35	24.1	32.5	B	

3489 a				
var	53	28	29.7	

3501—3560					3561—3620					3621—3680					3681—3740					3741—3800				
	17ʰ—18ʰ		+19°			18ʰ		+19°			18ʰ		+19°			18ʰ		+19°			18ʰ		+19°	
m		′	″	′		m	′	″	′		m	′	″	′		m	′	″	′		m	′	″	′	
9.3	55	57.0	12.4			9.5	7	22.0	55.1		9.4	17	54.5	40.2		8.4	26	44.4	0.7		7.7	34	2.6	34.6	B
9.5	56	7.2	51.6			8.8		47.8	55.5		8.7	18	5.5	15.7		9.5		55.5	16.9		9.3		4.5	8.7	
9.5		10.9	45.5			9.0	8	0.0	14.0		9.5		12.3	16.6		9.5	27	5.8	49.4		9.5		5.1	45.9	
9.5		26.6	4.4	B		8.1		8.8	50.3	K	9.5		12.7	51.9		9.5		30.7	4.5		8.3		20.0	50.8	
9.5		42.6	4.8			7.8		24.1	0.9	L	9.5		16.5	45.9		9.5		50.9	6.4		9.5		21.9	23.0	
7.8		52.9	41.6	K		9.5		51.8	3.9		8.7		18.4	31.0		9.5		53.9	28.7		8.7		30.0	39.7	
9.3		56.9	21.6	B		8.9		53.0	19.0		9.4		22.3	44.8		9.5		55.9	29.0		9.5		32.0	50.1	
6.5	57	0.6	35.3	K		7.8	9	7.9	44.8	L	9.5		28.4	49.2		9.5		56.7	45.0		9.1		34.3	18.4	*b*
7.0		4.4	33.1	K		9.3		22.1	55.5		9.5		33.9	39.2		9.5		56.8	18.2		8.5		34.6	48.3	
9.3		22.5	46.5			9.4		23.2	26.5	*a*	9.2		35.6	27.2		9.5		57.9	29.2		9.5		37.4	50.1	
9.4		27.0	0.6			9.1		23.8	29.0	R	9.1		40.1	57.2		9.4	28	1.8	18.7		9.5	35	0.4	56.0	
9.5		27.7	41.3			9.4		26.3	17.4		8.7		40.5	23.2		9.1		2.5	26.1	*b*	9.5		29.9	46.6	
9.2		58.5	54.4	R		9.2		38.3	7.1	Kb	9.4		58.5	29.5		9.3		12.7	16.2		8.3		57.7	50.3	K
9.3		59.0	53.0			9.5		40.0	44.0		9.1	19	6.7	30.2		9.4		13.4	32.1		9.3	36	9.7	28.0	
9.0	58	2.2	11.1			9.4		40.1	12.5		9.4		6.9	16.0		9.3		15.6	54.8		9.5		12.1	1.1	
9.8		4.1	51.6			9.5		48.4	53.3		9.1		11.7	31.0		9.4		18.3	31.1		9.2		12.5	48.5	*a*
9.1		6.5	48.2			9.3		59.6	2.5		9.5		18.0	31.0		9.5		34.8	12.4		8.6		15.9	46.3	K
9.2		30.6	45.1	K		9.0	10	0.7	27.2		9.5		22.4	34.3		9.5		36.2	48.4		9.5		19.0	58.1	
9.0		36.2	53.3	R		9.0		25.8	52.5		9.5		33.6	47.7		9.4		43.2	35.9		8.6		44.7	46.3	K
9.5		49.2	2.8			9.5		42.5	30.7		8.8		43.3	18.2		9.3		43.7	34.2		9.0		51.3	13.4	L
9.3		59.0	44.4	B		9.0		46.8	34.5		9.5		44.8	15.0		9.4		46.5	10.3		9.5		52.4	30.9	
9.5	59	41.2	26.5			9.4		47.7	54.3	*a*	9.2		52.0	40.0		9.5		47.5	18.2		7.2		55.7	19.8	L
9.5		41.9	19.6			9.3	11	13.0	38.9		7.6	20	2.9	5.9	Kb	9.2		50.1	20.2		9.2	37	9.6	2.0	
9.5		53.4	32.7			9.5		16.8	14.2		9.4		7.2	33.4		9.5		51.0	58.7		9.4		21.3	52.9	
9.5	0	9.8	11.0			8.0	12	15.6	24.4	L	9.5		35.5	11.2		9.3		52.0	59.9		8.6		31.2	41.2	
9.5		18.5	30.6			8.4		22.1	53.9		9.5		57.5	40.7		9.5		52.0	54.2		9.4		36.9	2.6	
9.5		24.2	23.4			9.5		26.5	5.7		9.5		58.5	23.4		9.5	29	4.9	42.7		9.3		45.3	50.2	
9.4		45.5	49.9			9.5		37.2	43.7		9.5		59.1	34.0		9.4		10.0	59.5		8.9		57.2	52.8	K
9.2		51.8	40.6			9.5		43.6	34.5		9.0	21	15.0	6.8		9.5		12.8	28.7		9.5	38	2.8	11.8	
9.5		56.5	50.8			9.5		46.2	58.5		9.4		23.4	12.5		9.5		13.0	31.8		9.0		8.5	55.6	
9.5		58.3	29.3			9.3		50.7	46.9		7.7		25.9	12.4	K	9.5		25.9	8.6		9.0		9.8	54.9	
8.3	1	8.8	41.3	K		9.5	13	16.8	22.4		9.4		34.2	10.3		9.3		33.8	27.2		9.4		10.7	27.4	
7.7		14.5	38.6	K		9.5		20.5	43.7		9.0		34.9	13.2		8.1		42.0	46.0	K	9.3		35.9	7.0	
9.4		36.8	45.5			7.8		31.8	7.2	K	9.5		35.1	55.6		9.5	30	0.6	34.7		9.4		49.1	34.3	
9.5		58.2	39.6			9.5		39.0	35.4		9.5		59.8	6.4		9.4		2.2	17.3	B	9.5		49.9	27.1	
9.1	2	6.1	55.7			9.1		42.1	59.4		9.5	22	6.9	8.8		7.3		4.3	53.4	Kb	9.5	39	7.3	59.7	
9.5		14.8	11.7			9.3		45.5	0.7		9.5		14.2	31.6		8.2		30.2	18.0	*B*	9.5		9.7	10.5	
9.5		28.8	21.0			9.5		53.0	40.9		9.5		18.8	32.2		9.4		40.9	2.8		9.3		10.6	56.6	
9.1		33.5	27.2	K		9.5		53.9	31.2		9.1		40.6	57.3	Bb	9.4		46.0	1.6		7.0		15.1	50.4	K
9.0	3	44.5	0.5	K		9.5		53.9	29.4		8.3	23	3.3	40.8	K	8.8		51.6	30.8		9.0		33.6	33.6	
9.4	4	8.1	58.0			9.1	14	13.8	59.4		9.3		34.8	18.0		9.4		54.0	4.5		9.5		50.7	13.3	
9.1		27.8	29.9	K		9.5		40.5	17.2		8.9		56.9	1.7		9.2		55.8	7.3		9.5	40	2.3	57.9	
9.2		45.1	28.9	K		9.4		47.6	45.8		9.5	24	17.3	27.0		9.5	31	23.5	34.7		9.4		4.4	25.4	
8.3		49.2	53.3	L		9.3		48.6	53.5		9.4		25.9	4.9		9.4		24.3	36.7		9.3		33.4	31.8	
9.5		57.0	4.6			8.2		50.9	50.9	K	9.4		27.2	14.1		9.5		27.6	28.5		9.5	41	0.6	3.4	
9.3	5	14.2	21.0			9.5	15	19.4	31.7		9.5		27.2	12.2		9.4		28.4	3.5		9.5		14.7	29.4	
9.5		33.8	30.0			9.3		26.3	0.6		9.2		29.7	48.4		9.5	32	26.5	43.7		8.9		17.2	43.7	B
9.3		44.6	7.8			9.3		30.5	44.8		9.3		35.3	48.4		9.4		28.2	28.1		9.0		20.2	16.6	
9.5		45.8	2.2			9.4		37.7	1.2		9.5	25	6.4	46.3		9.5		40.7	59.8		9.4		36.2	54.0	
9.4		51.2	34.7			8.5		41.2	38.6	L	9.4		28.5	53.3		9.1		48.3	3.0		8.1		46.2	57.6	L
9.0		51.2	12.3			8.9		43.4	58.9		8.2		39.0	47.4	L	9.5		53.9	17.9		9.5		46.8	11.6	
8.2		53.3	3.5	K		9.5		54.9	41.3		9.2		50.5	29.7		9.5		59.4	22.8		9.1		59.4	52.6	
9.0	6	28.2	38.9			9.5	16	10.7	0.9		9.4		51.3	36.1		9.0	33	6.6	7.9		9.5		59.5	55.8	
9.0		30.7	45.1	K		9.5		32.0	57.5		9.2	26	1.2	21.0		9.3		8.7	3.3		9.3	42	7.2	22.9	
8.8		43.0	47.3	K		8.1		36.5	4.8	K	8.1		3.6	21.9	K	3.4		32.2	17.3		9.5		10.6	17.7	
9.4		54.2	1.4			9.5		58.5	32.1		9.1		4.5	42.9	*b*	7.9		34.9	56.6	*B*	8.0		22.6	38.7	K
9.4		55.3	48.2			8.8	17	7.1	55.2	K	9.5		33.5	5.2		9.4		35.5	13.5		9.1		28.6	48.7	
9.5	7	4.7	39.3			9.2		22.7	10.4		9.5		35.5	45.7		9.5		38.1	0.3		6.1		33.9	10.5	L
9.5		5.2	30.7			8.9		22.8	54.1	K	9.5		42.2	54.8		9.3		43.4	47.0		8.8		34.3	18.3	
9.5		6.2	1.3			9.4		36.5	23.4		9.5		43.6	12.0		8.3		48.2	34.0	*B*	9.5		49.9	0.5	
		+	+					+	+				+	+				+	+				+	+	
10pr.		*25.98*	*0.02*			*10pr.*		*25.99*	*0.18*		*10pr.*		*26.00*	*0.31*		*10pr.*		*26.02*	*0.43*		*10pr.*		*26.05*	*0.55*	

3750 *a*				
9.2	34	50.4	47.2	*a*

3801—3860				3861—3920				3921—3980				3981—4040				4041—4100			
	18ᵐ	+19°			18ᵐ—19ᵐ	+19°			19ᵐ	+19°			19ᵐ	+19°			19ᵐ	+19°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.3	42 58.3	52.8		8.9	52 44.4	27.2		9.4	1 49.9	3.9		8.3	14 9.8	11.8	K	9.5	23 21.9	19.6	
8.5	43 3.6	33.4		9.4	56.8	46.4		9.5	2 0.3	26.7		9.1	12.7	23.4	K	9.5	46.3	43.0	
9.5	20.4	18.5		8.3	53 11.3	29.1		8.7	2.4	59.1	K	9.5	15.1	43.6		9.3	24 18.0	47.3	
9.5	20.9	54.2		8.8	16.1	25.1		9.0	16.3	10.2		9.3	25.6	26.9		9.5	25.5	53.9	
9.4	29.8	0.6		7.7	17.3	17.4	K	9.3	20.2	17.6		9.5	49.5	41.6		9.3	27.1	16.2	
9.1	44 11.2	52.0	*b*	9.3	24.0	40.1		8.3	32.5	0.0	K	9.5	52.9	23.2		8.0	37.2	7.7	K
9.4	21.4	7.0		9.5	33.6	47.4		9.2	40.0	44.0		9.0	15 2.7	31.3		9.4	47.9	16.3	
9.0	23.9	43.9		9.4	34.2	37.3		9.4	3 2.3	46.5		9.5	3 6	33.4		9.1	25 0.5	54.0	
9.5	32.7	0.9		9.3	43.4	54.5		9.5	16.6	58.0		9.0	4.6	33.3		9.5	18.5	31.0	
9.3	36.4	51.8		8.7	59.1	18.6	K	9 5	24.0	26.0		9.4	9.8	20.4		9.5	30.5	39.9	
8.8	46.0	13.5	K	9.0	54 12.0	59.5		9.5	36.1	15.2		8.0	15.7	32.8	*B*	9.4	38.9	30.7	*a*
9.3	45 36.8	0.9		8.7	19.5	48.5	K	8.5	4 5.8	57.4	K	9.4	37.3	3.5		9.5	47.8	48.4	
9.5	49.1	1.0		9.4	27.6	26.4		9.5	13.5	4.5		9.5	58.0	49.6		9.2	53.5	30.5	R
9.5	58.0	49.7		8.8	30.4	45.2		8.8	22.3	34.8		9.5	16 14.2	9.0		9.5	26 36.9	57.0	
9.4	46 6.3	1.9		9.5	35.1	8.6	R	7.7	28.8	30.6	*B*	9.1	19.8	54.7		9.5	37.1	18.5	
9.5	8.0	40.7		9.4	40.0	1.6	*a*	9.5	30.2	59.0		7.6	50.7	6.2	K	9.5	51.3	55.0	
9.2	11.7	0.1		8.0	43.8	49.3	K	9.5	52.7	42.0		7.1	53.9	59.8	K	9.4	55.0	30.8	
9.4	20.9	2.3		9.2	44.9	17.6		9.4	5 16.3	39.0		9.2	17 8.5	5.2		9.5	27 21.4	8 3	
9.5	21.5	14.9		6.5	45.7	6.5	K	8.6	19.8	11.2		9.4	10.2	8.0		9.5	30.7	8.6	
9.3	26.0	36.8		7.0	52.2	57.2	K	9.4	52.6	51.2		6.5	28.3	59.1	*a*K	9.3	47.5	30.9	
9.5	26.9	49.2		9.5	55 13.6	54.8		9.1	57.8	12.8		9.4	41.5	11.1		8.7	51.0	4.3	K
9.5	27.3	39.8		9.4	24.8	48.2		9.1	6 2.2	14.5	*b*	9.3	18 4.0	55.4		9.5	59.2	15.9	
9.3	37.6	33.2	*b*	9.0	28.4	18.1	K	8.9	7.8	30.0		9.5	20.3	30.4		5.8	28 13.3	27.6	K*b*
9.5	39.5	27.9		9.5	57.3	45.0		9.2	40.8	13.0		7.2	24.1	39.4	P	9.5	24.2	57.6	
9.5	56.9	50.4		9.3	56 22.9	47.8		9.4	51.6	48.0		8.9	38.4	31.2	K	9.5	24.7	10.9	
9.5	59.2	38.6		8.5	28.4	32.3	K	8.9	56.9	18.9		9.4	47.2	0.8		8.3	29.1	44.2	
9.0	47 15.5	5.0		9.3	33.0	54.8		9.5	7 4.9	1.6		8.8	53.1	22.9		8.4	29.1	55.2	
9.5	23.9	47.3		6.0	33.5	27.4	K	9.5	6.8	43.2		9.3	19 1.5	57.3		9.5	32.4	28.9	
9.5	29.6	43.2		9.5	54.8	2.1		7.5	16.1	57.3	R	6.6	4.2	59.9	*a*L	9.2	38.3	1.6	
9.4	36.3	11.9		9.3	57 5.2	16.2		9.2	17.3	23.6		5.0	7.5	30.9	K*b*	9.3	41.1	28.4	
9.5	38.1	50.0		9.3	34.3	18.6		9.5	47.0	24.4		9.5	7.7	3.6		9.5	29 4.4	2.9	
9.3	43.9	28.8		9.2	44.0	58.5		8.9	49.5	50.0	K	9.1	20.5	10.6		9.5	15.2	1.1	
9.0	52.1	7.4		9.5	44.0	21.1		9.3	58.0	8.2		9.2	27.5	56.2		8.8	22.1	28.3	R
9.0	48 2.1	23.3		9.5	46.0	14.7		9.5	8 11.3	2.6		9.5	52.6	40.2		9.5	23.8	39.3	
9.0	21.1	39.5		8.8	46.4	46.6		8.5	32.0	20.3		6.1	53.6	49.2	K	9.0	40.1	42.8	
7.0	22.8	39.7	K	9.5	58.7	14.0		6.0	44.9	57.6	K	9.5	20 4.5	37.3		9.5	56.5	30.6	
9.3	41.7	5.5		9.3	58 3.7	13.1		9.5	45.2	34.6		6.2	7.9	36.0	K*b*	9.0	58.3	19.3	
9.3	58.4	57.0		9.5	8.9	53.0		9.3	54.6	22.1		9.5	9.6	37.3		9.2	30 6.8	43.2	
9.3	49 1.2	2.4		9.5	14.9	42.4		7.2	9 6.8	10.1	K	6.6	11.8	58.5	*a*K	9.5	16.9	49.3	
7.8	3.3	1.5	K	9.5	26.6	10.8		9.5	8.1	30.8		9.5	18.0	37.1		8.1	26.7	8.3	*B*
9.4	8.4	22.3		7.2	35.1	3.3	B	8.2	10.1	47.2	S	9.5	24.1	54.6		8.7	33.2	8.5	*B*
9.5	19.9	51.0		9.4	50.1	29.6		9.5	11.1	30.3		9.2	27.6	27.7	K	9.5	33.3	49.6	
9.3	24.5	46.7		9.3	52.8	5.3		9.1	13.2	36.6		9.1	29.2	52.5		9.5	38.8	16.2	
9.1	28.0	24.6	*b*	9.1	59 9.0	51.2		9.4	28.2	11.7		8.7	44.8	46.4		9.0	43.0	57.6	R
9.5	44.6	14.7		8.8	10.0	48.2		9.2	51.2	54.8	K	9.5	45.4	7.9		9.5	53.7	15.1	
9.5	52.2	56.9		9.5	34.6	21.1		9.5	10 0.6	9.7		*9.1	21 6.1	35.1	K	9.3	53.9	6.9	
9.5	56.3	2.4		8.5	53.4	30.1	K	9.5	12.3	11.5		9.0	14.3	52.0	K	9.5	31 10.7	59.8	
7.5	50 0.7	39.7	K	9.5	55.6	43.1		9.5	15.7	49.3		7.4	35.0	57.3	*a*K	9.5	26.5	45.6	
9.5	4.4	32.0		9.3	0 3.1	10.7		9.5	17.2	54.9		9.3	53.0	55.1		8.9	30.6	38.6	
9.3	48.6	8.9		9.0	4.9	0.7		9.3	11 13.0	8.4		9.5	22 10.2	18.3		7.9	30.6	2.1	K
9.5	51 0.3	44.7		8.9	24.2	4.9	K	9.0	31.7	58.5	K	9.5	14.3	2.7		9.4	59.2	12.8	
9.5	40.0	52.0		9.5	34.8	56.9		8.0	39.8	56.6	K	9.5	14.9	17.0		8.1	32 1.5	32.2	K
9.3	55.5	16.9		9.5	48.3	2.2		9.2	56.8	48.7		9.4	16.3	38.8		9.4	6.0	6.8	
8.1	59.0	56.8	K	9.3	58.0	59.2		9.2	12 24.2	22.2	*a*	9.0	18.2	9.7		9.5	18.2	51.0	
9.3	52 15.6	18.1		9.1	59.5	50.3	K	*var*	27.2	20.8	L	9.5	30.5	26.1		9.5	21.5	47.7	
8.9	20.9	24.7		9.5	1 2.6	37.1		8.0	13 6.3	27.5	L	9.5	38.0	35.0		9.5	26.1	58.2	
9.0	22.2	20.2		9.5	8.0	34.6		9.5	27.6	11.4		9.3	56.3	51.8		8.8	31.5	28.5	
5.8	27.4	36.2	L	8.9	26.8	26.6		8.6	40.3	7.4	K	9.4	57.7	32.2		9.4	35.9	31.7	
9.5	42.1	37.5		7.3	31.9	38.1	L	9.4	44.5	19.8		7.0	23 1.9	59.1	*a*K	9.4	38.0	41.4	
9.5	42.3	21.7		8.9	39.7	31.7	S	9.3	46.6	44.8		9.3	3.8	32.0		9.5	45.8	1.5	
	+	+			+	+			+	+			+	+			+	+	
10 pr.	*26.09*	*0.69*		*10 pr.*	*26.14*	*0.83*		*10 pr.*	*26.19*	*0.98*		*10 pr.*	*26.26*	*1.13*		*10 pr.*	*26.33*	*1.26*	

4025 a			
9.5	*21*	*4.3*	*21.0*

DB 6.0 1855 BD ed 1903

4101—4160				4161—4220				4221—4280				4281—4340				4341—4400			
	19h	+19°			19h	+19°			19h	+19°			19h—20h	+19°			20h	+19°	
m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′		m	′ ″	′	
9.1	32 47.0	18.9	a	8.3	42 12.3	51.4	K	8.7	51 9.0	53.4	K	9.5	59 22.2	2.5		9.3	9 8.8	16.9	
9.0	50.0	20.1		7.7	20.1	18.0	L	9.4	11.1	52.5		9.5	28.5	45.7		8.6	11.1	31.4	
9.5	55.0	53.0		9.3	22.7	47.8		9.5	20.8	52.1		9.5	29.3	26.6		9.3	39.7	20.0	
9.0	59.8	31.7		8.5	44.0	56.4	K	9.3	34.4	47.6		8.8	29.6	33.0		9.1	40.3	10.9	K
9.3	33 4.5	42.2	Rb	8.0	47.7	26.2	B	9.3	42.8	38.7		8.3	31.8	9.8		9.5	54.6	23.0	
9.3	11.0	52.0		9.5	43 4.9	18.1		8.5	43.4	16.7	K	9.1	46.4	18.8		9.5	10 1.7	10.0	
9.2	16.9	52.1		9.5	10.6	53.8		9.4	45.5	45.0		9.4	57.0	28.2		9.4	2.0	51.6	
8.6	19.3	15.6	K	9.5	28.9	18.3		9.3	49.9	50.2		9.3	0 2.7	38.8		9.4	9.0	38.6	
9.2	21.4	23.2		9.5	40.3	10.1		3.8	52 19.2	6.1	K	9.0	2.7	44.0		9.4	20.0	35.3	
9.4	26.5	23.8		9.5	41.4	39.8		9.0	23.2	13.1		9.4	1 16.3	57.5		9.5	23.6	3.1	
7.9	30.6	4.3	K	9.5	48.3	34.6		9.3	35.5	48.3		8.3	19.3	25.1	K	8.5	52.7	46.5	K
9.5	44.4	49.0		9.1	44 10.4	30.7		9.4	44.2	59.1		8.3	22.1	25.4	K	9.4	11 3.2	3.7	
9.5	45.1	56.0		8.9	19.0	57.7		9.5	58.5	6.1		9.5	40.6	4.4		9.0	6.7	11.6	
9.1	34 3.0	17.3	K	9.5	22.3	27.3		9.5	53 17.3	23.4		9.4	51.5	55.5		9.1	10.7	25.0	
9.5	27.4	26.7		7.5	24.0	51.2	L	9.5	28.9	50.4		8.0	55.6	48.0	K	8.1	18.3	58.6	B
9.4	27.5	5.3		8.8	28.7	59.5		8.5	31.9	30.3		9.5	2 0.8	41.0		8.8	23.7	41.7	K
9.5	35.0	7.2		7.5	31.7	40.5	L	9.2	47.1	19.7		9.5	12.8	22.7		8.6	32.2	52.5	
9.4	35.5	4.3		9.5	38.4	40.8		9.2	48.3	13.7		9.3	48.1	48.6		9.4	41.1	15.9	
9.5	38.4	27.4		9.5	41.3	12.8		9.5	54 0.0	58.5		9.0	52.8	39.0	K	9.1	50.7	32.7	K
8.4	46.1	49.1	K	9.5	45.1	39.5		9.5	16.4	27.3		9.3	57.1	27.2		9.5	55.4	49.5	
9.5	35 40.4	57.7		9.5	50.6	37.6		9.5	26.1	48.5		9.4	58.0	16.2		9.3	12 12.6	21.2	
9.5	51.6	15.9		9.5	45 8.9	51.8		8.0	28.8	36.6	K	9.5	3 13.8	50.0		9.0	17.4	34.1	
9.2	36 2.0	6.5		9.0	12.3	45.6	L	8.8	29.6	8.4	Kb	9.4	24.6	0.5		9.5	47.1	11.7	
9.3	7.6	45.3		9.0	25.8	25.6	K	9.5	41.4	13.2		9.2	42.8	51.6		9.3	57.7	30.6	a
8.7	11.7	57.0		9.3	25.9	33.6		9.5	51.3	3.7		9.2	55.2	59.0	B	9.4	13 4.8	5.5	
9.5	30.9	10.0		9.4	30.8	21.5		9.3	57.2	11.4		9.3	4 7.1	14.5		9.5	14.4	24.0	
*9.0	35.4	30.8		8.0	49.6	29.4	K	9.5	55 1.9	32.8		9.5	14.8	6.5		9.5	19.4	12.3	
9.0	40.9	41.2		9.1	54.2	24.0		9.5	12.4	39.4		9.0	20.4	19.0		9.5	19.9	4.0	
8.8	44.9	49.7		9.5	59.4	37.7		9.4	12.9	28.0		9.1	21.9	44.0		9.1	23.9	59.6	B
9.1	45.4	58.0		9.3	46 8.3	4.6		9.4	24.3	59.6		8.8	5 18.1	49.8		8.9	41.1	27.8	
9.5	37 29.8	33.8		9.5	29.8	13.4		9.3	28.3	2.5		8.8	19.8	18.5		9.0	45.7	21.3	
9.4	50.0	4.8		9.3	48.7	55.1		9.5	40.8	28.0		8.6	19.8	38.9	R	9.5	46.6	0.4	
9.0	38 2.5	20.0		9.5	51.0	14.7		9.5	50.9	44.3		9.5	32.3	33.6		9.0	47.4	33.0	
9.1	10.9	10.4		9.5	53.0	19.7		8.5	54.1	19.7		9.3	33.1	20.0		9.3	14 0.6	33.4	
9.4	12.4	14.2		7.2	59.4	58.5	L	9.4	57.2	22.6		9.3	36.2	30.4		9.4	21.1	21.6	
9.5	54.2	2.5		7.5	47 0.4	57.8	L	9.5	56 8.9	46.8		9.1	36.3	26.0		9.2	26.4	27.5	
8.8	54.9	31.5	K	9.2	4.9	14.3	b	9.0	9.4	58.2		9.4	37.5	37.2		9.0	15 0.2	37.5	B
9.5	39 5.0	53.6		9.5	14.4	4.9		9.0	11.8	42.2		9.3	53.8	50.9		8.0	0.4	12.4	B
8.8	37.4	25.2	K	8.5	35.8	37.3	K	9.0	12.5	36.6		8.9	57.8	38.8	K	9.0	1.4	32.7	B
9.5	44.5	36.6		9.5	48 7.3	28.4		9.2	33.0	23.7		9.3	6 13.2	2.4		8.5	5.9	3.0	Kb
9.0	45.9	38.0		9.5	54.3	5.4		9.3	38.5	46.1		9.5	21.1	40.2		8.0	23.7	10.0	K
9.5	46.8	53.0		9.0	59.8	51.0		9.5	39.7	38.3		7.6	26.2	6.5	K	9.3	27.7	39.5	
9.5	54.9	28.3		9.3	49 3.2	30.0		9.5	48.3	25.2		9.5	42.3	13.6		9.5	27.7	55.5	
9.5	55.3	32.1		9.2	5.1	20.8		9.5	58.7	5.4		9.2	52.8	30.3		9.5	36.6	31.3	
9.5	40 4.4	2.6		8.5	5.8	52.8		9.5	57 1.8	59.2		9.0	54.2	12.0	K	8.8	37.8	54.1	K
8.5	18.4	59.9	K	9.0	10.0	44.1	K	9.5	6.1	34.8		9.3	7 7.8	18.6		8.4	48.4	18.9	
8.5	28.1	23.5	K	9.4	13.0	25.2		9.4	15.9	24.2		8.8	8.8	54.5		9.5	55.2	39.3	
9.3	59.6	6.3		8.5	13.6	37.5	K	9.3	17.9	55.6		9.5	16.4	2.3		9.3	57.4	8.6	
9.5	41 3.6	1.0		9.4	15.5	24.1		9.3	20.9	13.0		9.1	20.5	55.3	a	7.5	16 16.7	22.7	K
9.4	8.7	50.3		9.3	21.6	8.6		9.4	29.8	53.9		9.5	30.4	21.3		9.5	21.1	9.4	
9.5	12.0	44.4		9.5	26.7	12.8		9.1	39.9	10.3	b	9.5	41.8	33.0		7.7	31.4	52.5	K
9.2	38.6	1.3		9.5	52.4	12.8		9.3	41.4	33.8		9.1	43.5	13.1	K	9.4	45.7	15.8	
8.2	45.3	0.1	L	9.5	56.9	24.5		9.3	58 0.3	12.8		9.5	53.4	2.0		9.5	59.9	2.8	
8.2	45.9	37.9	B	9.5	50 1.7	58.8		8.7	15.3	8.6		8.9	8 7.7	10.5	K	9.5	17 7.1	57.1	
9.5	47.4	56.3		8.7	8.9	49.0	K	9.3	29.6	24.4	R	9.5	30.1	17.0		9.5	22.7	48.2	
9.5	52.0	18.0		9.5	19.6	28.0		8.7	40.1	48.0		9.1	35.1	30.9		7.7	52.3	6.8	S
9.5	57.1	3.1		9.3	24.0	12.8		5.5	43.5	35.0	Pb	9.2	43.0	3.9	K	9.5	59.6	1.8	
9.5	42 1.3	9.1		8.6	41.6	10.2	K	9.2	59 3.3	19.7		9.5	47.7	56.6		9.5	18 12.4	23.4	
9.4	4.4	30.8		9.5	42.6	39.7		9.1	9.2	28.1		8.6	48.3	11.6	K	9.1	14.1	16.1	K
9.4	4.9	36.0		8.0	53.6	24.9	P	9.3	21.8	53.6		9.0	51.3	12.8	K	9.5	40.7	38.2	
10pr.		26.40	1.37	10pr.		26.49	1.49	10pr.		26.57	1.61	10pr.		26.67	1.74	10pr.		26.76	1.84

4126 a
9.5 | 36 34.1 | 33.9 |

4401—4460					4461—4520					4521—4580					4581—4640					4641—4700				
	20ᵐ		+19°			20ᵐ		+19°			20ᵐ		+19°			20ᵐ—21ᵐ		+19°			21ᵐ		+19°	
m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′		m	° ′	″	′	
9.5	18	41.8	58.8	B	9.1	30	18.6	24.9	b	8.5	42	9.5	19.0	K	9.4	51	29.2	36.0		9.5	5	5.2	7.0	
9.4		51.1	36.1		9.3		27.5	45.6		9.5		21.9	43.2		9.1		29.7	26.4	B	9.4		29.3	8 8	
9.4		54.1	45.5		9.4		32.5	47.6		9.0		28.1	16.6	K	9.3		31.9	8.8		9.3		36.7	15.9	
9.3		55.1	8.2		9.2		34.8	50.4	K	9.1		36.6	48.5	K	9.5		53.0	3.7		9.5		38.0	35.6	
9.5	19	3.4	42.3		8.9	31	0.9	51.2	K	8.3		44.7	53.6	K	8.9		53.9	50.1		9.3		38.5	26.3	
8.5		5.8	1.0	K	9.1		0.9	44.4	K	9.5		57.5	56.4		8.8	52	18.5	29.9	R	9.5	6	1.7	48.0	
9.0		24.9	3.6	Kb	9.3		9.8	45.6		8.8	43	27.8	22.9	R	9.5		55.8	8.9		9.5		1.7	8.0	
6.3		31.3	21.8	K	9.5		17.5	17.2		9.4		54.3	31.8		8.9	53	4.5	41.0		9.2		10.5	49.3	B
9.5		47.1	36.1		9.5		23.9	47.4		9.5	44	4.2	45.8		8.4		12.9	30.3	Kb	8.2		25.3	6.1	K
9.3	20	16.4	56.1		9.5		26 6	4.6		7.6		8.1	56.1	L	7.3		34.8	23.3	K	9.5		34.2	21.4	
9.3		26.7	48.0		9.5		29.5	44.5		9.5		10.6	26.9		9.5		51.0	43.0		9.5		39.2	29.4	
9.5		45.6	0.7		9.0		58.9	36.4		9.5		54.8	4.5		9.5	54	3.8	2.2		8.7		46.1	39.0	K
8.9		52.7	49.9	K	8.8	32	10.9	54.4	K	8.7		59.5	25.6	B	9.5		6.3	21.4		9.3		47.0	42.1	B
8.0		56.1	35.8	K	9.5		25.7	10.7		9.5	45	4.0	21.1		9.5		10.6	53.6		9.0		52.7	29.4	
8.2	21	3.5	8.6	B	9.3		28.2	44.4		8.9		4.5	9.5		9.5		24.1	17.6		9.5		55.7	14.9	
9.4		37.6	3.4		7.6		34.3	3.2	B	8.9		8.0	41.0		9.5		50.2	57.8		9.0	7	2.3	10.9	
8.0		39.7	15.8	R	9.5		59.8	54.8		8.0		12.8	39.0	K	9.3	55	0.1	51.2		9.5		32.3	7.4	
9.5		42.8	23.0		9.5	33	0.5	4.5		9.5		21.0	3.1		9.3		12.8	23.0	B	9.0		42.0	20.4	
6.5		51.6	38.1	B	8.5		6.9	47.5		9.5		21.3	8.8		9.3		18.0	5.3		9.5		44.7	43.2	
9.5	22	21.6	54.5		9.5		27.5	55.8		9.0		28.3	15.9		9.5		24.7	31.5		9.4		50.5	2.6	B
9.2		41.9	10.1		9.3		36.0	9.4		8.9		37.1	12.3		9.1		35.9	19.3	K	9.0		55.1	59.2	
9.2		47.1	32.7		9.5		50.9	46.0		8.6		44.9	14.9	K	9.0		36.5	9.5	K	8.0	8	31.7	14.9	K
6.5		53.1	35.7	B	9.5	34	6.9	51.5		9.4		47.1	57.8	K	9.5		54.5	58.4		9.5		39.4	25.3	
9.3	23	14.4	58.2		6.5		12 5	24.4	K	7.3		48.1	35.4	K	9.4	56	2.7	15.9		9.5		51.5	39.2	B
9.5		29.0	31.5		9.5		44.0	31.5		9.5		52.1	56.5	a	9.0		4.7	51.1		9.5	9	1.2	12.8	
6.5		33.8	11.2	K	9.5		46.2	37.9		9.5	46	5.2	17.8		9.2		22.7	5.6		7.2		12.5	6.3	K
9.4		43.4	4.2		9.5	35	11.8	51.3		9.2		13.1	59.8	R	9.5		32.1	58.1		9.5		45.2	47.3	
9.4		53.2	50.3		9.5		30.2	43.4		9.5		17.4	26.7		9.4		38.5	12.1		9.5		53.2	5.8	
9.4	24	13.4	58.6	R	7.3		36.9	20.7	Kb	9.5		26.8	25.6		9.0		46.7	45.6		9.3	10	9.2	37.7	
9.5		14.7	24.3		7.3		37.6	6.6	K	9.5		29.3	45.3		9.5	57	23.6	6.4		9.0		25.6	56.9	
9.4		16.3	22.0		9.5		40.9	5.0		9.3		32.2	19.6	K	9.5		41.3	1.3		9.0		28.2	41.5	
9.2		26.3	37.7	K	9.5	36	33.6	0.8		7.7	47	3.3	2.8	K	9.5	58	12.7	32.8		9.5		41.7	5.4	
9.4	25	1.7	53.5		9.5		54.9	31.3		8.5		19.3	53.4		9.2		14.2	18.7	Bb	7.3	11	2.2	24.5	K
9.3		4.3	40.7	Kb	7.0		56.9	21.7	K	8.7		27.3	53.0		9.5		15.0	21.0		7.8		4.0	53.7	K
9.4		32.5	28.0		8.0	37	4.9	13.4	K	6.8		35.4	12.6	K	9.2		26.9	51.8		9.5		26.4	44.5	
9.5		41.5	16.7		9.5		7.0	59.0		9.5	48	12.9	50.1		9.5	59	7.4	4.8		9.4		54.4	13.5	
9.5		46.6	21.8		8.7		11.1	40.9		9.5		16.1	1.1		8.0		14.7	29.0	K	9.5	12	10.3	3.0	
9.5		48.5	7.1		9.5		14.0	53.5		9.5		32.4	21.9		8.5		31.2	50.5	Kb	9.5		15.2	16.3	
9.4	26	0.5	29.7		9.5		47.0	15.2		9.4		40.5	19.5		9.5		45.7	41.5		8.8		33.6	4.1	B
9.5		13.8	36.3		8.0	38	13.6	11.1	K	9.5		42.4	53.9		9.5		48.0	16.2		9.5		47.5	24.6	
9.3		18.4	7.1	b	6.8		15.5	58.3	K	8.8		50.2	11.4		9.5	0	25.1	47.4	B	9.5		57.2	22.1	
9.5		19.8	30.7		9.5		41.9	25.0		8.8		54.1	8.1		9.5		25.6	7.6		9.0	13	10.2	42.1	
8.2		25.3	47.2	K	9.5	39	5.2	57.3		9.2		55.0	18 6		9.0		27.8	22.5	B	9.4		21.7	28.0	
9.5		47.8	34.5		9.2		5.5	28.8		7.0		59.2	51.4	L	8.8		38.3	7.7	K	9.1		25.7	4.5	K
9.5	27	8.0	37.0		9.3		26.2	9.3		9.1	49	0.9	58.0		9.5	1	11.7	38.3		9.4		39.3	0.1	
9.4		10.3	56.2		9.5	40	2.5	27.5		9.5		21.8	37.5		9.5		14.0	54.6		8.0		56.8	13.8	K
9.5		26.5	39.0		8.2		11.7	35.8	K	9.5		25.2	59.1	B	9.5		41.3	11.6		9.5	14	39.6	3.7	B
7.8		36.3	26.3	R	9.4		17.5	36.2		8.6		33.6	17.4		9.5		51.2	50.1		9.5		51.7	28.0	
9.5		41.1	18.4		9.4		18.4	52.0		9.5		35.0	7.9		9.5	2	13.7	8.7		9.3	15	2.2	49.8	
7.7		44.0	1.8	K	9.5		27.2	26.2		9.5		35.9	5.4		9.5		35.5	54.9	B	9.2		20.9	11.6	K
8.5		52.5	56.0		9.4		31.4	17.1		9.5		46.8	46.0		9.5		45.0	53.5		4.4		23.7	10.6	K
8.9	28	43.4	0.7	K	9.5		33.2	21.8		9.3		55.4	19.3		9.5	3	0.7	41.4		8.4		35.5	23.6	
9.5		53.1	13.9		9.4		42.5	2.0		9.5		58.5	38.0		9.5		4.6	0.6		9.2	16	47.7	15.9	
9.5	29	3.5	26.6		9.2		51.0	47.7		8 0	50	32.8	5.4	K	9.5		7.2	18.0		9.5		56.0	53.9	
9.3		36.5	7.2		9.3	41	19.5	52.6		9.5		43.2	1.0		9.0		11.2	36.6		9.5		56.9	8.0	
9.5		43.5	43.1		9.2		20.2	29.3	K	7.8		50.0	35.9	K	9.4		34.1	56.5		9.0	17	3.2	38.6	
9.5		45.0	22.2		9.5		21.1	38.9		9.2		53.0	9.8		9.5		50.7	43.2		9.5		28.4	23.4	B
9.2	30	2.3	51.7	K	9.5		36.2	12.8		9.5		53.9	14.0		7.3		53.1	22.4	Kb	9.5		28.6	27.1	B
9.1		2.8	55.8	K	9.5		43.1	45.4		9.5	51	5.0	13.4		9.5	4	29.0	56.4		9.5		29.0	53.4	B
9.5		14.1	4.7		9.5	42	8.2	47.2		8.3		14.0	40.4	K	9.5		48.7	26.0		9.5		44.7	24.1	
		+	+				+	+				+	+				+	+				+	+	
10pr.		26.89	1.97		10pr.		27.04	2.10		10pr.		27.18	2.22		10pr.		27.34	2.34		10pr.		27.53	2.46	

DB 6.0 1855 BD ed 1903

21ʰ—22ʰ

+19°

4701—4760

m	21ʰ	+19°	
9.0	17 50.5	38.0	
9.5	52.5	12.3	B
9.5	18 3.2	49.8	
9.4	10.0	11.7	B
9.5	39.2	35.6	
9.5	41.7	4.7	
9.5	19 15.2	49.8	
9.5	34.9	12.0	
9.0	21 1.2	18 7	K
9.3	4.7	7.1	
9.4	11.0	37.4	B
9.0	11.7	28.7	K
9.0	23.7	14.5	K
9.4	22 22.2	26.9	B
9.5	22.5	6.9	
9.4	27.0	33.1	B
9.4	30.7	47.7	
9.5	23 15.7	7.3	
9.2	32.6	7.5	K
9.1	51.1	59.9	B
9.5	57.4	49.5	
9.2	24 2.2	8.7	K
9.5	14.2	6.2	
9.0	22.7	14.1	K
8.5	30.7	39.7	K
9.4	25 0.8	26.0	
9.4	3.1	56.0	
9.5	4.5	57.4	
9.2	8.6	45.5	B
9.5	17.2	39.0	B
9.2	36.2	19.0	
9.5	47.7	57.4	
9.3	26 4.1	14.1	
9.5	21.7	40.0	
9.5	54.8	8.3	
9.1	27 16.8	55.1	
9.5	25.4	6.4	
9.4	31.1	30.4	B
9.5	32.5	14.5	
6.5	28 3.2	17.3	K
9.5	9.8	59.6	
9.5	26.7	30.0	
9.3	45.7	52.9	
9.5	29 4.0	49.5	
9.3	20.2	26.6	
9.4	48.5	53.0	B
9.5	30 6.2	23.5	
7.0	18.4	8.9	K
9.4	42.7	39.0	
8.0	44.5	42.9	K
9.5	31 48.2	18.7	
9.5	58.2	18.3	
9.5	32 11.0	0.3	
6.0	16.7	37.5	L
7.8	21.0	56.7	L
9.3	25.2	29.3	
9.0	50.6	45.7	B
9.5	33 14.7	14.2	
9.3	19.2	49.8	
9.5	34 22.0	37.0	
	+	+	
10 pr.	27.77	2.61	

4761—4820

m	21ʰ	+19°	
9.5	34 25.9	23.7	
9.4	36.7	34.8	Bb
9.5	35 13.2	15.6	
9.5	21.2	14.2	
9.5	47.2	19.4	
9.4	36 17.3	58.5	
9.5	34.2	25.3	
9.5	37 3.2	10.3	
8.8	9.1	15.8	K
9.5	21.2	1.5	
9.5	34.7	14.2	
9.5	38 3.2	3.8	
9.0	9.6	31.1	K
9.5	17.7	15.6	
9.5	34.0	46.7	
9.4	48.7	55.6	
9.3	57.0	48.1	B
9.3	59.7	20.7	
9.4	39 2.0	52.7	B
8.7	21.7	21.8	
9.5	55.2	32.5	
9.5	40 2.1	59.7	
9.3	4.7	49.8	
7.8	5.7	14.9	L
9.5	5.8	4.2	B
9.4	7.7	9.0	B
9.5	52.7	45.3	
9.0	41 37.5	17.7	
9.5	41.7	38.7	
8.6	42 1.2	50.0	L
9.2	27.4	8.2	K
9.5	35.7	5.4	
6.5	40.2	48.3	K
9.2	55.2	57.0	
9.3	43 3.2	43.2	R
9.0	41.1	50.5	
5.5	44 45.6	8.7	K
8.9	51.7	16.4	B
9.5	45 11.8	17.4	B
9.3	25.3	22.2	
8.9	32.5	20.2	
9.5	45.4	45.0	
9.0	45.9	42.6	B
9.5	47.7	51.1	
9.5	51.3	16.0	
9.5	57.9	21.5	B
9.6	46 3.6	20.5	
9.2	28.5	57.8	K
7.0	51.5	43.1	K
8.8	47 0.2	45.3	
9.3	11.2	9.4	
9.0	15.3	15.6	
9.5	28.3	50.6	B
6.9	28.9	1.8	K
7.4	35.2	47.7	K
9.4	48.7	37.7	
9.3	48 22.9	7.8	K
9.2	23.7	19.8	K
9.3	30.0	6.9	α
8.5	30.5	28.3	K
10 pr.	28.04	2.76	

4821—4880

m	21ʰ—22ʰ	+19°	
9.0	48 54.3	48.1	B
8.5	49 8.3	6.4	K
9.5	13.1	19.0	
8.8	17.5	57.9	
8.3	19.2	22.1	K
9.5	32.2	49.8	
9.5	32.8	1.5	
9.3	38.5	31.8	
9.3	44.7	45.6	
9.4	50 34.5	38.8	B
9.5	45.7	41.2	
9.5	47.7	23.1	
6.8	51.2	37.1	K
8.5	54.2	34.5	R
7.5	57.6	9.9	R
9.5	51 1.2	49.5	
9.5	9.2	15.5	
9.5	27.8	54.4	
9.5	52 58.2	21.4	
9.5	53 14.2	24.5	
8.2	21.7	12.4	K
9.5	30.7	0.0	
9.5	55.6	55.8	
8.7	55 28.5	44.0	R
8.8	40.7	50.5	Kb
9.5	56 25.2	51.7	
9.5	26.7	27.0	
9.1	51.4	44.5	b
9.5	59.6	4.3	
8.2	57 27.0	34.8	K
9.2	58 22.3	34.3	
9.5	22.3	3.8	
9.0	59 7.5	54.1	
8.5	19.8	57.2	K
9.5	39.3	32.1	
9.5	59.5	41.5	
9.5	0 11.5	16.0	
9.5	14.3	48.3	
9.5	39.5	52.8	
9.5	39.6	3.5	
9.4	41.1	9.4	
9.5	1 22.3	56.2	
9.5	41.1	56.4	
9.5	52.1	10.5	
9.5	2 1.0	0.7	
9.4	7.6	42.8	
9.2	15.6	49.8	Kb
9.5	28.6	34.5	
9.5	36.4	4.6	
9.5	52.9	57.7	
9.4	3 11.2	7.9	K
9.3	55.9	4.6	α
9.4	58.3	48.8	
9.0	4 10.5	5.1	K
9.3	25.5	6.0	K
9.1	32.1	48.1	R
9.5	59.1	3.6	
9.4	5 0.6	12.3	
9.4	27.6	12.7	
9.3	33.2	2.3	
	+	+	
10 pr.	28.31	2.88	

4881—4940

m	22ʰ	+19°	
9.4	5 34.1	54.0	
9.5	46.6	56.0	
9.5	6 5.6	30.0	R
8.9	50.1	23.4	B
8.8	51.8	30.5	Rb
9.0	7 11.6	51.5	
9.5	26.6	42.8	
9.5	48.6	17.5	
9.5	8 48.5	1.6	
9.5	9 17.3	26.8	
9.2	23.1	51.9	Bb
9.4	45.8	26.7	
9.2	10 9.1	54.4	B
9.0	14.2	1.4	
9.3	57.6	35.2	
9.0	11 0.1	23.0	B
6.8	53.6	14.7	Kb
9.3	12 4.2	12.7	
9.3	4.7	19.7	
9.3	8.4	56.3	
9.5	12.1	57.8	
9.3	18.1	31.8	
9.0	18.5	4.1	K
9.5	26.1	47.1	
9.5	45.0	49.7	
9.3	13 1.5	50.7	b
9.5	14 48.5	53.8	
9.5	15 21.6	51.5	
9.5	32.1	23.7	
9.3	50.6	17.7	
9.1	16 15.6	3.6	b
8.9	52.6	49.5	
9.4	53.6	23.4	
9.5	17 17.2	57.6	
9.0	37.6	33.1	K
9.2	52.0	11.3	R
9.0	52.6	43.9	
9.5	18 11.1	50.6	
9.1	15.1	20.6	K
*8.6	37.7	25.1	K
9.5	19 1.6	37.3	
9.0	35.1	33.8	K
9.2	41.7	59.5	
9.0	49.6	12.3	K
9.5	20 16.0	26.9	
9.5	28.9	3.2	
9.5	38.6	49.8	
9.0	46.6	53.3	B
9.4	49.7	28.3	
8.8	52.4	55.6	K
8.8	57.5	8.3	K
9.3	58.6	46.4	
9.0	21 9.8	24.1	
9.0	9.8	23.6	
9.3	17.0	23.8	α
9.2	53.1	23.4	
9.3	59.6	47.3	
9.3	22 24.1	31.0	
8.7	27.1	24.8	
9.5	28.0	2.1	
	+	+	
10 pr.	28.65	3.00	

4941—5000

m	22ʰ	+19°	
8.7	22 44.6	36.2	K
9.4	55.6	35.5	α
9.5	23 42.1	52.2	
9.2	50.6	24.2	
9.5	24 30.6	52.6	
9.5	36.1	7.4	
9.5	25 28.7	35.6	K
9.0	34.1	15.4	
6.2	38.1	29.4	K
9.2	46.6	44.5	K
9.5	26 4.1	31.0	
9.5	16.1	56.5	
9.1	36.1	14.3	
9.0	54.6	46.7	K
9.3	27 20.1	22.7	
9.5	25.6	12.3	
8.4	43.1	13.6	K
9.3	45.6	41.1	
9.5	49.2	59.3	
9.0	59.6	30.0	R
8.3	28 8.1	57.4	
8.9	11.6	14.4	K
9.4	19.1	50.1	
9.5	36.6	34.9	
6.3	52.0	32.1	Kb
9.0	56.5	19.5	K
9.3	29 0.7	54.1	
9.3	31.2	2.3	K
9.5	30 2.1	59.5	
9.5	20.7	54.5	
9.5	34.4	52.5	
9.4	31 34.1	13.3	
9.5	36.3	51.5	
9.5	38.6	29.6	
9.5	32 2.1	41.8	
9.0	7.1	28.8	K
8.9	27.3	13.6	K
9.3	27.8	26.5	
9.5	51.0	58.2	
9.1	58.0	5.8	K
9.4	33 25.4	1.4	
7.5	30.4	17.6	K
8.5	38.0	20.7	K
9.2	34 6.5	13.4	K
9.4	11.0	22.7	
9.3	13.0	56.6	
9.5	57.0	59.3	
9.3	35 4.4	28.3	R
*9.4	34.5	15.3	
9.5	49.0	19.3	
9.0	54.4	45.7	
8.7	58.4	11.6	Kb
9.5	36 47.5	13.7	
9.5	47.8	1.2	
9.0	37 44.0	34.6	R
9.5	46.7	57.8	
9.3	38 9.4	2.6	
9.5	39 23.3	4.5	
9.3	25.2	9.7	
9.4	40 0.1	3.5	K
	+	+	
10 pr.	28.92	3.09	

4920ᵃ				
9.5	18	56.6	25.5	α

4988ᵃ				
8.2	35	32.9	36.7	α

5001—5043

m	22ᵐ ′ ″	+19° ′	
9.5	40 27.0	33.6	
9.5	32.4	16.3	K
9.3	38.4	4.0	
9.5	40.2	14.2	
9.0	43.3	51.8	
9.5	50.0	37.4	
9.5	41 4.4	52.0	
9.2	18.8	2.6	K
9.0	45.5	25.3	R
9.5	56.8	0.1	
9.4	42 31.0	55.7	
8.8	43 17.5	32.8	
9.5	29.0	31.4	
9.4	34.4	31.8	
9.5	44 28.5	12.0	
9.5	57.2	56.4	
8.3	45 8.9	17.2	K
8.6	12.4	41.6	
9.2	18.0	26.2	
9.5	21.2	38.1	
8.6	45.0	22.1	K
9.5	56.0	59.4	
9.5	46 9.0	53.0	
9.5	12.5	11.0	
9.2	35.2	14.7	
9.3	36.1	10.0	
8.5	50.4	4.6	K
6.8	47 4.8	6.5	K
8.6	16.8	42.4	
8.4	28.5	33.9	K
9.5	48 8.2	58.5	
9.5	11.2	7.3	
9.2	49 15.0	44.4	b
8.9	21.8	4.3	
8.3	50 19.2	12.0	K
5.0	23.3	59.7	Kb
9.3	51.4	24.6	
9.3	53.0	45.4	
8.2	51 2.3	57.3	K
*9.3	52 18.4	23.5	
9.2	33.5	50.7	K
9.1	49 4	53.8	b
9.5	53 41.0	27.0	
	+	+	
10pr.	29.21	3.17	

50.39ᵐ
9.5 | 51 45.4 | 19.4 | α

5044—5085

m	22ᵐ—23ᵐ ′ ″	+19° ′	
8.8	54 5.5	31.5	
9.5	9.0	52.4	
9.5	23.2	59.0	
9.1	48.8	9.3	B
7.1	49.2	3.0	L
9.3	52.5	45.4	
8.2	57.5	34.6	K
9.4	56 7.9	45.7	
9.5	10.4	8.3	
9.1	53.7	59.8	
9.5	55.1	24.2	
9.5	57 23.6	16.9	
9.3	58 2.4	57.0	
7.0	27.6	28.0	R
6.2	59 20.6	6.6	L
9.5	0 14.6	23.5	
6.8	18.5	48.4	K
9.5	28.1	59.7	
9.3	2 3.1	14.5	Kb
9.4	3 9.3	20.7	
9.5	4 11.2	44.4	
9.5	31.6	21.4	
9.4	5 4.1	24.8	
8.5	57.8	11.8	K
9.5	6 12.1	54.7	
9.5	16.6	37.8	
9.4	50.1	29.9	
9.5	7 2.4	58.4	
9.3	11.6	32.0	
6.8	21.1	38.1	K
8.9	58.1	30.1	K
9.0	8 0.6	15.1	
9.4	10.8	3.2	
9.4	22.0	47.6	
9.5	26.8	41.1	
9.1	41.1	20.4	
9.4	9 47.8	7.3	
9.1	53.5	57.1	b
8.7	10 1.2	11.1	K
9.3	5.2	7.5	K
9.2	11 57.7	27.6	b
9.5	12 8.6	53.2	
	+	+	
10pr.	29.58	3.24	

5086—5127

m	23ᵐ ′ ″	+19° ′	
9.4	12 26.6	21.1	
8.5	44.8	10.6	L
9.3	52.2	52.5	
7.0	13 26.8	2.7	K
9.1	14 12.1	20.4	K
7.5	39.1	50.9	K
9.5	15 15.3	13.0	
7.2	35.1	46.0	Kb
9.4	16 7.6	18.6	
9.5	19.2	59.2	
9.5	21.4	34.5	
8.3	36.6	16.8	R
9.1	40.2	11.7	
9.2	17 43.1	48.8	b
9.5	46.6	17.6	
9.5	49.1	58.0	
9.3	18 32.6	37.9	
8.4	19 27.8	2.4	K
9.5	36.3	27.2	
8.9	38.8	34.4	
8.7	20 9.1	12.0	K
9.0	25.1	23.7	
9.0	28.5	0.1	K
9.3	57.3	16.5	
9.1	58.6	14.0	K
6.5	21 9.8	5.9	K
9.5	53.9	14.4	
9.4	22 56.7	38.3	
9.5	23 7.0	55.1	
9.0	37.6	48.0	
9.5	24 30.4	8.1	
9.3	47.9	44.9	
9.5	48.4	55.3	
9.5	53.5	4.2	
9.5	26 15.9	20.8	
9.5	27 39.4	24.0	
9.3	28 4.9	34.1	
8.8	25.9	15.6	K
8.8	26.0	47.2	K
9.5	48.4	37.9	
9.5	58.6	55.7	
7.8	29 11.3	52.0	K
	+	+	
10pr.	29.91	3.29	

5128—5169

m	23ᵐ ′ ″	+19° ′	
9.3	29 34.4	15.0	
6.8	30 53.9	47.3	K
9.1	31 22.7	8.6	K
9.0	22.7	12.5	K
8.8	57.9	39.0	
9.5	33 7.4	35.4	
9.5	26.6	15.1	
8.5	31.4	33.2	K
9.5	59.4	57.3	
9.5	34 29.4	13.9	
7.3	44.4	29.6	K
8.9	35 4.9	31.3	K
9.0	14.4	37.3	K
9.5	34.9	58.8	
9.5	41.4	44.2	
9.0	36 17.0	8.5	
9.1	37 2.4	36.2	
9.5	4.9	43.8	
9.4	48.2	0.4	
6.2	38 7.9	36.8	R
9.5	26.5	27.3	
9.5	53.4	19.4	
9.5	56.0	34.2	
9.1	39 22.4	18.5	K
9.1	23.4	58.2	b
9.5	45.0	50.2	
9.5	53.4	8.8	
9.2	56.1	2.1	K
9.5	41 9.4	59.9	
9.4	21.2	57.1	
9.5	42 7.1	11.6	
9.1	11.6	18.2	R
9.4	45.2	19.4	B
9.0	43 20.4	35.5	
9.5	48.9	53.0	
9.5	55.9	9.5	
8.2	44 58.5	2.2	K
9.2	45 47.6	58.4	
9.4	46 3.9	57.2	
9.5	19.4	27.0	
9.5	43.4	30.0	
9.0	47 24.6	8.0	
	+	+	
10pr.	30.28	3.33	

5170—5211

m	23ᵐ ′ ″	+19° ′	
8.9	47 38.4	34.0	
9.5	48 7.1	27.1	
9.5	40.8	8.3	
9.0	42.1	3.1	K
8.0	57.1	24.7	K
9.4	49 21.9	43.0	
7.5	50 13.4	31.6	Lb
9.5	51 8.4	9.1	
9.5	53.2	37.1	
9.3	52 2.5	33.3	
7.7	2.9	37.5	L
9.4	3.6	38.3	
9.5	5.2	20.9	
9.5	26.4	17.1	
9.1	42.1	26.0	
9.1	42.4	14.6	K
9.3	53 6.5	42.1	B
9.5	20.5	34.0	
9.5	48.4	4.2	
9.5	51.6	38.5	
9.5	52.1	19.5	
9.5	54 16.9	55.0	
9.4	37.9	20.2	
9.5	55 14.9	7.0	
9.1	36.8	10.3	b
9.5	38.4	16.1	
9.4	41.7	58.0	B
7.5	56 0.2	51.5	K
9.5	52.9	31.0	
9.5	57 3.9	23.3	
9.5	6.9	14.7	
9.5	11.4	50.0	
9.3	33.4	52.3	
9.3	53.7	9.9	
9.5	55.9	27.1	
9.3	58 26.8	7.4	b
9.5	29.2	57.9	
9.5	48.9	14.3	
7.8	59 23.7	44.4	K
9.5	31.8	0.0	
8.0	47.7	44.1	K
9.4	53.6	3.7	
	+	+	
10pr.	30.66	3.34	

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QB 6.0 1855 BD ed 1903

Nomogramm zur Ermittlung genäherter Präzessionswerte für die nördliche BD

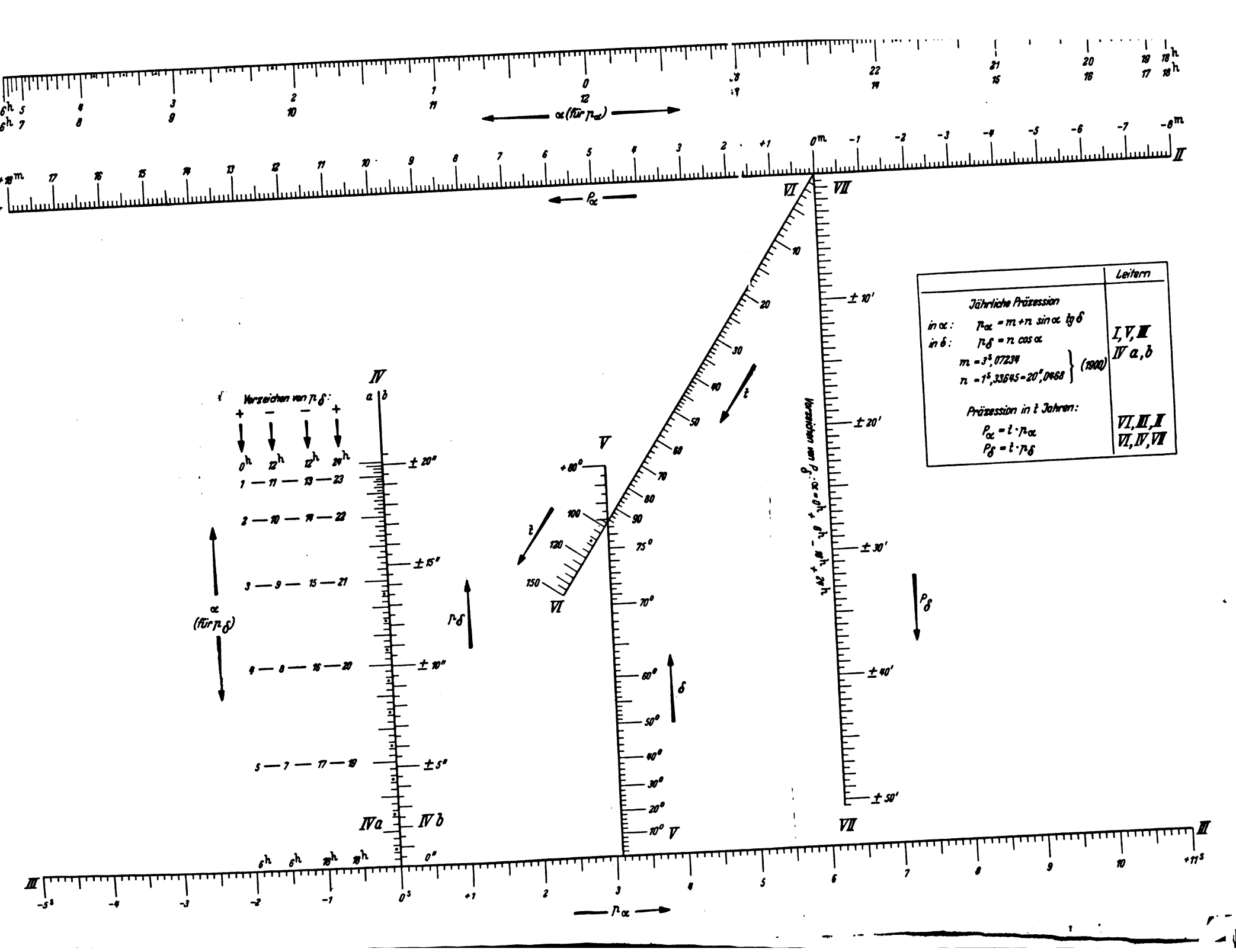
Katalog und Karten gelten für das Äquinoktium 1855,0. Zur genäherten Übertragung auf ein anderes Äquinoktium dient das umseitig abgedruckte Nomogramm, aus dem die jährlichen Präzessionen sowie die Präzessionen bis zu 150 Jahren entnommen werden können. In dem Nomogramm erscheinen alle α-Präzessionen auf horizontalen, alle δ-Präzessionen auf vertikalen Leitern. An einigen Stellen der Leiter-Teilungen ist auf glatte Zehnerwerte der Variablen, die nicht durch Teilstriche repräsentiert werden (z. B. in der α-Leiter I zwischen 2^h und 4^h die Teilwerte 10^m, 30^m, 50^m) der Übersichtlichkeit halber durch besondere Punktzeichen hingewiesen. Das Nomogramm gibt den der Zeit proportionalen Anteil der Präzession und gilt grundsätzlich für 1900 (etwa Zeitmittel von BD-Äquinoktium und heute gebräuchlichen Äquinoktien). Der durch Beschränkung auf die linearen Präzessionsglieder entstehende Fehler einer Positionsübertragung mit dem Nomogramm ist bei niedrigen Deklinationen gering; er wächst mit der Deklination. Für $\delta=80^0$ liefert das Nomogramm bei Überbrückung von 100 Jahren den neuen Sternort mit einer Abweichung vom streng berechneten Ort, die, im Großkreis gerechnet, unter 2′ bleibt. Deklinationen über 80^0 können mit dem Nomogramm nicht erfaßt werden.

Zu dem Nomogramm benötigt man eine Ablesegerade von etwa 30 cm Länge; am besten verwendet man ein durchsichtiges Lineal, auf dessen Unterseite eine haarfeine Gerade eingeritzt ist.

Das Nomogramm gibt die Präzessionswerte, die man zu den auf ein früheres Äquinoktium bezogenen Rektaszensionen und Deklinationen zu addieren hat, um diese auf ein späteres Äquinoktium zu beziehen.

1. **Präzession in Rektaszension.**
   a) Legt man die Ablesegerade durch den α-Punkt der ganz oben horizontal liegenden α-Leiter (I) und den δ-Punkt der im unteren Teil in der Blattmitte vertikal stehenden δ-Leiter (V), so findet sich in ihrem Schnittpunkt mit der ganz unten horizontal liegenden p_α-Leiter (III) der Wert der jährlichen α-Präzession (in Zeitsekunden).
   b) Dreht man die Ablesegerade um diesen Punkt der p_α-Leiter in solche Lage, daß sie die im Mittelteil des Blattes schräg verlaufende t-Leiter (VI) in dem Punkt schneidet, der dem zu überbrückenden Zeitintervall (t in Jahren gezählt) entspricht, so findet sich im Schnittpunkt mit der zweitobersten horizontalen Leiter (II) der Wert P_α der α-Präzession für t Jahre (in Zeitminuten).

2. **Präzession in Deklination.**
   a) Auf der im unteren Blatteil links vertikal stehenden Doppelleiter (IV) liegen den α-Werten linker Teilung (IVa) die Werte der jährlichen Präzession in Deklination p_δ (in Bogensekunden) als rechte Teilung (IVb) gegenüber. Das Vorzeichen ist über den Kolonnen der α-Beschriftung für jeden Quadranten angegeben.
   b) Legt man die Ablesegerade durch den α- (bzw. p_δ-) Punkt dieser Doppelleiter und den dem Zeitintervall entsprechenden Punkt der im Mittelteil des Blattes schräg verlaufenden t-Leiter (t in Jahren), so findet man in ihrem Schnittpunkt mit der rechts vertikal stehenden P_δ-Leiter (VII) die Gesamtpräzession in δ für t Jahre (in Bogenminuten).


α (für p_α)
p_α
II
VI
VII
Leitern
Jährliche Präzession
in α: $p_\alpha = m + n \sin\alpha \operatorname{tg}\delta$
in δ: $p_\delta = n \cos\alpha$
$m = 3^s,07234$
$n = 1^s,33645 = 20'',0468$ (1900)
I, V, III
IV a, b
Präzession in t Jahren:
$P_\alpha = t \cdot p_\alpha$
$P_\delta = t \cdot p_\delta$
VI, III, II
VI, IV, VII
IV
Vorzeichen von p_δ:
+ − − +
0^h 12^h 12^h 24^h
1 — 11 — 13 — 23
2 — 10 — 14 — 22
3 — 9 — 15 — 21
4 — 8 — 16 — 20
5 — 7 — 17 — 19
α (für p_δ)
p_δ
IVa
IV b
V
t
δ
Vorzeichen von P_δ: $\alpha = 0^h \ldots 6^h$, $6^h \ldots 18^h$, $18^h \ldots 24^h$
P_δ
III
p_α

3 2044 020 776 126

32044020776126